TENDER NOTICE

We are in the process of establishing the **Boeing–RVCE–AICTE IDEA Lab** at our institute, as per the AICTE guidelines to promote innovation, design thinking, and prototyping skills among students and faculty.

Sealed tenders (group-wise) are invited from reputed suppliers/ manufacturers or authorized distributors for the supply, installation, and commissioning of equipment, tools, and machines as per the enclosed specifications. Vendors may quote for one or more groups, clearly indicating the group number and item details in the quotation.

Please note the following instructions:

1. Hard copy of the quotations must be submitted in a **sealed cover**, superscribed as ***"Quotation for Boeing–RVCE–AICTE IDEA Lab (Group No.)"***.
2. Each quotation should clearly mention the **Group number**, item description, unit price, applicable taxes, warranty details, delivery schedule, and installation charges (if any).
3. The quotation should be valid for a minimum period of **90 days** from the date of submission.
4. The last date for submission of sealed quotations is **22nd Sept. 2025** at the following address:
   The Principal
   Boeing-RVCE-AICTE IDEA Lab
   R.V. College of Engineering
   Mysuru Road, Bengaluru – 560059
5. Fill this form is designed to collect essential details required for initiating vendor creation in the SAP system for further procurement activities.
   Google Form Link: https://forms.gle/5y6RgqVYDxYvcyvr9

Note: Submission of this form does not guarantee automatic approval. All entries will undergo verification and approval by the AICTE IDEA Lab Procurement Committee.

We request you to kindly submit your most competitive offer in accordance with the above instructions.
For further clarifications, you may contact us at **Dr. Gangadhar Angadi,** gangadharangadi@rvce.edu.in / **8105888568 (Co-coordinator, Boeing-RVCE-AICTE IDEA Lab).**

We look forward to your participation and continued support in setting up this laboratory of national importance.

The Principal
RV College of Engineering
RV Vidyanikethan Post
Mysuru Road,
Bengaluru – 560059

PRINCIPAL
RV COLLEGE OF ENGINEERING
BENGALURU - 560 059

GROUP-1 DIGITAL FABRICATION			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Dual Nozzle 3D printer	**Printing Technology:** Fused Filament Fabrication (FFF) or Fused Deposition Modeling (FDM). **Printable Area:** The minimum printable area should be at least 400 x 400 x 400 mm or above **Printer Design:** Core XY or Cartesian. **Temperature Range:** **Hot end:** Up to 350°C or above (Independent extruder) **Heat bed:** Up to 120°C. or above. **Nozzle:** Compatible with All polymers, 0.4, and 0.8mm **Steel Sheet:** Provided with satin or smooth PEI surface. **Filament Diameter:** 1.75mm (supports PLA, PET-CF/GF, HtPA-CF/GF, ASA, ABS-CF20, HtPA-CF25/CF25 etc.). **Extruder:** Gearbox with 1/10 ratio, **Speed:** 550 MM/Sec or above Stepper Drivers for smooth motion. or equivalent **Stepper Motors:** Choose between 1.8° or precise 0.9° X, Y stepper motors. **LCD Screen:** 3.5" graphic 65k color screen or larger. **Connectivity:** USB drive, LAN, or internet. Supported Materials: PLA, PETG, ASA, ABS, PP, PC, flexible filaments, and more. **Wi-Fi Module:** Built-in (network connectivity not required for setup or operation). Compatibility: Windows, macOS, Linux.	01

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GROUP-2 DIGITAL FABRICATION			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	3D Scanner	**Light Source:** Infrared VCSEL structured light. **Point Distance:** 0.1mm to 3mm (depending on the object size and desired data density). **Working Distance:** Effective working distance of 160mm-1400mm, with an optimal distance of 400mm. **Maximum FOV:** 434mm x 379mm (at optimal working distance). **Scan Speed:** Up to 14 FPS (frames per second), with a point acquisition rate of 980,000 points per second. **Scan Accuracy:** 0.05mm **Scanner Size:** 220mm x 46mm x 55mm. **Scanner Weight:** 500g. **Carrying Case Size:** 245mm x 245mm x 90mm. **Interface:** USB 2.0 or above. **PC Configuration:** **OS:** Windows 10/11 (64-bit) or macOS Ventura 13 or newer. **CPU:** Intel Core i7-11800H or higher. **RAM:** 32GB or more. **Graphics Card:** NVIDIA GTX 1050 or higher. **Video Memory:** 6GB or more. **For Apple Silicon:** M1 Pro or higher (8-core GPU or more), with 32GB of RAM or more.	01

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GROUP-3 DIGITAL FABRICATION			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	PCB Milling Machine	**Cuttable Materials:** Modeling Wax, Chemical Wood, Foam, Acrylic, Poly Acetate, ABS, PCB, Copper glad, etc **Table Size:** 200 (X) × 150 (Y) mm or more **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 **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 **Additional Accessories:** Collate 3mm: 1 No. End mill 0.4mm: 2 Nos. End mill 0.8mm: 2 Nos. End mill 1 mm: 1 Nos. End mill 3 mm: 1 Nos. End mill 6 mm: 1 Nos. Ball mill 1mm: 1 Nos. Ball mill 6mm: 1 Nos. Engraving bit: 2 Nos Copper Cam Software with installation: 1 No. Resin Wood 200mm*150mm: 5 Nos. Copper Clad Plate Laminate Single & Double Side PCB Size: 6*4 inch: 5 Nos each. Double-sided tape 1 Roll of 12mm X 10mtr: 2 Nos.	01

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GROUP-4 DIGITAL FABRICATION			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	CO2 Laser Cutting Machine	**Working Area:** 1220 x 1220 mm **Laser Type:** CO2 DC Glass Laser Tube/RF Metal Laser Tube **Laser Power:** 80/100W **Wave Length:** Up to 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 **Reposition Accuracy:** +/- 0.05mm **Graphic file:** PLT, CDR, AI, DWG, DXF, DST, BMP, JPEG, TIFF, GIF, PCX	01

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GROUP-5 DIGITAL FABRICATION			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Lathe Machine cum milling	**Drilling Diameter:** 22 mm **Distance Between Centers:** 500 mm/800 mm (20"/31-1/2") **Max. Longitudinal Travel:** 440 mm/740 mm (17-1/3"/29-1/8") **Max. Cross Travel:** 200 mm (7-7/8") **Taper of Spindle:** MT4 **Spindle Hole:** 28 mm (1-1/9") **Step of spindle speed:** 7 steps **Range of Spindle Speed:** 160-1360 RPM **Barrel Travel:** 70 mm (2-3/4") **Swing Over Bed:** 420 mm (16-5/9") **Taper of Center:** MT3 **Metric Thread Range:** 0.2-6 mm **Inch Thread Range:** 4-120 T.P.I **Longitudinal Range of Automatic Feeding:** 0.05-0.35mm/0.002-0.014" **Cross Range of Automatic Feeding:** 0.05-0.35mm/0.002-0.014" **Max. Drilling Capacity:** 22mm (7/8") **Worktable Size (LxW):** 475x160mm(18/1-2"x6-2/7) **Max. End Mill:** 28mm (1-1/9") **Max. Face Mill:** 80mm (3-1/7") **Distance Between Spindle Center and Column:** 285mm (11-2/9") **Distance Between Spindle and Worktable:** 306 mm (12") **Head Stock travel of up and down:** 110mm (4-1/3") **Spindle taper:** MT3 **Swivel Degree of Head Stock:** +- 360 Degree **Motor power:** 0.75 kW	01

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GROUP-6

DIGITAL FABRICATION

Sl. No	Equipment Name	Specifications	QTY
1.	Vinyl Printer	**Max Cutting Width(mm):** 1000 mm and above **Max Cutting Speed:** 1530mm / sec (60ips, Diagonal) **Max Cutting Force:** 0-600g **Supported Media width:** 630mm /1210 mm **Memory Buffer:** 512 MB (with AAS II). **Acceptable Material Thickness:** 0.8 mm (0.03 in). **Motor Drive:** DC Servo Control. **Interfaces:** USB 2.0 (Full Speed), Serial (RS-232C) and Ethernet. **Command Sets:** HP-GL, HP-GL/2 (set by command or auto-detect). **Control Panel:** LCD (20 digits x 2 lines), 14 Keys, 1 Power LED.	01
2.	Belt and Disc Sanding Machine	**Motor:** 230V 50Hz **Power:** 380W S2 30min **No-load Speed:** 1450rpm or more **Belt Size:** 100x914mm or less **Disc Size:** 150mm or better **Table Tilting Range:** 0°-45° **Belt Tilting Range:** 0°-90° **Table Size:** upto 190x125mm	01
3.	Scroll Saw	**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)	01
4.	Wood Turning Lathe	**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	01
5.	Bench Top Drill Machine	**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, 1300, 1900, 2670 (50 Hz), 690, 1070, 1560, 2280, 3200 (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	01
6.	Portable Welding Machine	**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	01
7.	Computerized Sewing Machine	**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 40.64cm **Maximum Stitch Width:** 7 mm	01

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		Number of Buttonhole Styles:7 **LCD Screen Display:** Yes **Bed Type** **Free Arm/Flatbed convertible** **Bobbin Type** **Drop & Sew Bobbin System**	
8.	Filament Dehydrator	**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	01
9.	Reflow Oven	**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	01

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GROUP-7

MEASUREMENT EQUIPMENT'S

Sl. No	Equipment Name	Specifications	QTY
1.	Digital multimeter	**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 **Capacitance Measurement:** Up to 1000 µF **Capacitance Accuracy:** ±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	05
2.	MSO 100 MHz	**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, 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 × 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 × H × D):** 380× 200× 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	01
3.	Digital oscilloscope	**Number of Channels:** Up to 2 independent analog inputs **Memory Record Length:** Up to 10 Mpts for extended waveform capture	01

		Bandwidth Limiting: Selectable 20 MHz bandwidth filter **Sampling Rate:** Maximum of 1 GSa/s real-time equivalent per channel **Rise Time:** ≤ 3.5 ns depending on probe and settings **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	

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GROUP-8

ELECTRONICS EQUIPMENT'S

Sl. No	Equipment Name	Specifications	QTY
1.	Power supply	**Output Configuration:** 4-channel design with independent electrical isolation across all outputs **Channel Output Ranges:** • 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 **Constant Voltage Operating Mode Line Regulation:** ≤ 0.01% + 3mV (approximate value within rated voltage range) **Load Regulation:** ≤ 0.01% + 3 mV (across rated load variation) **Ripple & Noise:** ≤ 1 mVrms across full bandwidth **Constant Current Operating Mode** **Line Regulation:** ≤ 0.2% + 3 mA **Load Regulation:** ≤ 0.2% + 3 mA Ripple Current: ≦ 3 mArms (typical) **Safety & 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** **Display Units:** Four separate displays required for individual channel status visualization **Display Type:** 4.3-inch LCD (color or monochrome as applicable) **Functional Features** **Tracking Operation:** Supported (required for synchronizing output behavior) **Auto Series/Parallel:** Supported (automatic internal reconfiguration required) **Power Requirements** **Supply Input:** 230V AC ±10%, 50 Hz **Mechanical Specifications** **Maximum Dimensions (W × H × D):** Within 200 mm × 100 mm × 200 mm **Maximum Weight:** 10 kg or less	01
2.	Function Generator	**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 0.1Hz. **Frequency Stability:** The frequency stability shall be within ±20 ppm (parts per million). **Frequency Accuracy:** The frequency accuracy shall be maintained within ±20 ppm.	01

		Frequency Aging: Frequency aging shall not exceed ±5 ppm per annum. **Amplitude Range:** Output amplitude shall be up to 10 V peak-to-peak (Vp-p) into a 50 Ω load. **Amplitude Accuracy:** Amplitude accuracy shall be within ±20% at maximum amplitude setting. **Output Impedance:** Nominal output impedance shall be 50 Ω with a tolerance of ±10%. **Attenuator:** A single-step attenuator of -40 dB ±1 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 ±10%, with frequency 50/60 Hz. **Ambient Operating Temperature:** Normal operation shall be ensured within the ambient temperature range of 0 °C to 40 °C. **Dimensions:** Maximum dimensions shall not exceed 255 mm (W) × 95 mm (H) × 295 mm (D). **Weight:** Maximum device weight shall be within 2.5 kg.	
3.	Bench Top Multimeter	**DC Voltage:** **Range:** 500 mV to 1000 V across 5 ranges. **Accuracy:** ±(0.03% rdg + 4 digits). **Input impedance:** 10 MΩ. **AC Voltage (True RMS):** **Range:** 500 mV to 1000 V across 5 ranges. **Accuracy:** ±(0.5%– 5% rdg + digits) depending on frequency and range. **Input impedance:** 10 MΩ. **DC Current:** **Range:** 500 µA to 20 A across 6 ranges. **Accuracy:** ±(0.02%–0.3% rdg + 2 digits) depending on range. **AC Current (True RMS):** Range: 500 µA to 20 A across 6 ranges. **Accuracy:** ±(0.5%–1% rdg + digits) depending on frequency. **Resistance:** **Range:** 500 Ω to 20 MΩ across 6 ranges. **Accuracy:** ±(0.1%–0.3% rdg + digits) depending on range. **Diode Test:** Max forward voltage 1.5 V, open voltage 2.8 V. **Capacitance:** **Range:** 5 nF to 50 µF. **Accuracy:** ±(2% rdg + 4 digits). **Frequency:** Input level varies by range; functions include Auto/Manual Range, Max, Min, dBm, Rel, Hold. **Continuity Beep:** Threshold <5 Ω. **Display:** Dual 7-segment LED, 0.4" and 0.5". **Power Source:** AC 100/120/230 V ±10%, 50/60 Hz. **Dimensions & Weight:** Approximately 251 × 91 × 291 mm; 2.6 kg.	01
4.	Non-Contact Voltage Tester	**Function:** Non-contact AC voltage detection tester. **Voltage Detection Range:** Approximately 90 V to 1000 V AC. **Detection Method:** Capacitive, with visual and audible indication. **Sensitivity:** Adjustable sensitivity for different voltage ranges. **Response Time:** Instantaneous detection within standard operating conditions.	05

		Indicators: Bright LED indicators and audible beep for voltage presence. **Operating Environment:** Suitable for use in ambient temperatures from 0 °C to 40 °C. **Power Source:** Powered by standard batteries (typically 2 × AAA or equivalent). **Safety Standards:** Complies with IEC/EN 61010-1 CAT III 1000 V safety standards. **Dimensions:** Compact, handheld design suitable for field use (approx. 150 mm × 30 mm × 25 mm). **Weight:** Lightweight, approximately 150 g for ease of portability.	
5.	LCR Meter	**Display:** Approximately 2.8" TFT touch LCD screen. **Resolution:** 25,000 or above counts resolution on both primary and secondary displays. **Basic Accuracy:** Within ±0.2% under standard conditions. **Test Frequencies:** Six or eight selectable frequencies depending on model variant. Measurement **Combinations:** Up to 15 different measurement combinations available. **Test Level:** Selectable AC test levels approximately 0.3 V, 0.7 V, and 1 V rms; DC test level selectable at ±1 V. **Measurement Speed:** Selectable measurement speeds of approximately 10 measurements per second (fast) and 2.5 measurements per second (slow). **Auto LCR Mode:** Automatic identification and measurement of component types within supported ranges. **Data Hold:** Feature available to hold measured data on display. **Interface:** USB virtual COM port provided for remote communication capabilities. **Software:** Datalogging software available for data capture and analysis.	01
6.	Soldering Station	**Power Rating:** Approximately 60 W maximum output power. **Temperature Range:** Adjustable from approximately 200 °C up to 480 °C. **Temperature Stability:** Within ±2 °C under normal operating conditions. **Heating Element:** Ceramic heating element for rapid heat-up and efficient temperature maintenance. **Display:** Digital or analog temperature display (depending on variant) for precise temperature control. **Temperature Control:** Adjustable via knob or digital interface with fine resolution. **Power Supply:** AC 220 V ±10%, 50/60 Hz. **Safety Features:** Thermal cutoff and overload protection within required standards. **Dimensions:** Compact design with 100 mm × 100 mm × 90 mm (W × H × D) or above **Weight:** Approximately 1.5 kg for ease of portability and bench use.	03
7.	Digital Microscope	**Magnification:** 1600X **Light source:** 8 LED lights **Resolution:** 1920×1080, 640*480 **Pixel:** 30W **Focal length:** 3-40mm manual adjustment Support Android 4.2 or above/widows/Mac system	01
8.	Soldering Rework Station	**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 ±2 °C.	01

		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. **Hot Air Features:** Auto-pause function on placement in cradle, airflow adjustable within operational limits. **DC Power Supply:** Provides output voltage approximately 15 V up to 2 A maximum current plus 5 V USB output for auxiliary power. **Control:** Microcontroller-based system with LED indicators for temperature and mode selection. **Safety:** ESD-safe design compliant with applicable standards. **Build:** Metallic body with powder coating, approximate dimensions 280 mm × 180 mm × 140 mm (W × H × D). Weight: Approximately 3.5 kg. **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. **Operating Temperature:** Suitable for ambient temperature approximately 0 °C to 40 °C	

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GROUP-9 POWER TOOLS			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Hand Drill Machine	**Rated Input Power:** Approximately 500 W or above maximum power consumption. **Bit Holder:** Standard 1/2"-20 UNF thread type. **No-Load Speed (1st Gear):** Adjustable from 0 up to approximately 3,000 rpm. **Power Output:** Approximately 300 W continuous output power. **Weight:** Approximately 1.7 kg total device weight. **Impact Rate at No-Load Speed:** Variable from 0 up to approximately 48,000 bpm. **Rated Torque:** Approximately 1.4 Nm maximum torque output. **Drill Spindle Connecting Thread:** Standard 1/2"-20 UNF thread. **Chuck Capacity (Min/Max):** Approximately 1.5 mm minimum to 13 mm maximum.	2
2.	Cordless drill	**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 **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	2
3.	Jig Saw	**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
4.	Miter Saw	**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
5.	Hot air gun	**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.	2

		Airflow: Adjustable within approximately 350 to 550 liters per minute. **Airflow Control:** Three selectable airflow settings.	
6.	Table saw	**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
7.	Bench grinder	**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
8.	Angle Grinder	**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
9.	Straight Grinder	**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
10.	Circular Saw	**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
11.	Blower	**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
12.	Cordless Screw Driver	**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
13.	Vacuum Cleaner	**Rated Input Power:** Approximately 1,100 W maximum power consumption.	1

		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 cm² 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.	
14.	Random orbit sander	**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
15.	Planer	**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
16.	Cordless Vacuum Cleaner with Starter kit	**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 cm² 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
17.	Rotary Tool Kit	**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/s² measured vibration	2

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GROUP-10 HAND TOOLS			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Rubber Grip Hacksaw	**Depth of Throat:** Approximately 98 mm (3.85 inches) nominal depth. **Blade Length:** Around 254 mm (10 inches) standard length.	2
2.	Hacksaw Mini	**Blade Length:** Approximately 10 inches nominal length. **Handle Material:** Constructed from metal as standard. **Overall Length:** Around 11 inches total length.	2
3.	Claw Hammer Steel Shaft	**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
4.	Ball Pein Hammer	**Weight:** Approximately 110 grams nominal weight. **Dimensions:** Around 32.6 cm × 10 cm × 2 cm (L × W × H) overall measurements.	2
5.	Rubber mallet	**Weight:** Approximately 450 grams nominal weight. **Dimensions:** Around 33.6 cm × 9.6 cm × 6.2 cm (L × W × H) overall size.	2
6.	Ring spanner set 12Pcs	**Weight:** 3.08 Kg nominal weight. **Quantity:** 12 pcs per set. **Size:** 6 mm to 32 mm overall range.	1
7.	Open end spanner set 12Pcs	**Weight:** Approx1.74Kg nom.wt. **Qty:** 12pcs/set. **Size:** 6mm-32mm overall dims.	1
8.	Combination Spanner set 8Pcs	**Weight:** Approx649g nom.wt. **Qty:** 8pcs/set.	1
9.	Allen key set 10pcs	**Hex Key Size:** 1.5,2,2.5,3,4,5,5.5,6,8,10mm; **Qty:**10pcs/set	2
10.	Allen key set 12pcs	**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
11.	Combination plier	**Weight:** Approx422g nom.wt. **Size:** 8"/200mm nominal	2
12.	Long nose plier	**Weight:** Approx399g nom.wt. **Size:**180mm/6" nominal	2
13.	Circlip straight 5"	**Weight:** Approx399g nom.wt. **Size:**130mm/5" nominal	2
14.	Circlip bent	**Weight:** Approx399g nom.wt. **Size:**130mm/5" nominal	2
15.	Diagonal Cutter	**Weight:** Approx239g nom.wt. **Size:**180mm nominal	2
16.	Wire Stripper	**Weight:** Approx281g nom.wt. **Size:**130mm nominal	2
17.	Adjustable spanner	**Size:** Upto 150 mm	2
18.	Pipe wrench	**Size:** Max 300 mm	2
19.	C – clamp	**Size:** Upto 75 mm	4
20.	C-clamp	**Size:** Upto 150 mm	4
21.	Snap- off Knife	**Size:**18 mmm	2
22.	16pcs screw driver set	**Pieces Per Set:** 16 pcs	1
23.	6pcs precision screw driver set	**Pieces Per Set:** 16 pcs	2
24.	Max steel snip cutter	**Length:** 250 mm	2
25.	PVC Pipe cutter	**Length:** 42 mm	2

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26.	Hot Glue Gun	**Power:** 40 W	4
27.	Small file set	**Length:** 160 mm	2
28.	Big file set	**Length:** 200 mm	2
29.	Chisel set	**Weight:** 340 gm	2
30.	Punch set	**Weight:** 390 gm	2
31.	Bench wise	**Base Type:** Fixed Size:2–3½" nominal **Jaw Width:** 60mm	2
32.	Router Bit Starter Kit	**Pieces Per Set:** 15 pcs	1
33.	Drill bit set	**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 **Weight:** ~1.3Kg nom.wt **Size(mm):** 205×115×55 overall	2
34.	Baby wise	**Vice Type:** Bench **Size:**2" nominal **JawWidth:**50mm	2
35.	Ratchet Set	**Vice Type:** Bench **Size:** 2" nominal; **Jaw:** 50mm	2
36.	Pegboard		5

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GROUP-11 MEASURING AND SAFETY EQUIPMENT'S			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Digital Vernier Caliper	**Product Type:** Digital Calliper **Meas.Range:**0–150mm / 0–6" **Resolution:**0.01mm	2
2.	Micrometer	**Resolution:**0.001mm/0.00005" **Meas.Range:**0–25mm/0–1"	1
3.	Steel Rule 300mm	**Product Type:** Steel Rule **ScaleSize:**12"/300mm **Material:** Stainless Steel	5
4.	Steel Rule 600mm	**Product Type:** Steel Rule **ScaleSize:**24"/600mm **Material:** Stainless Steel	5
5.	Engineering Square	**Size:**150×80mm nominal **Material:** Carbon Steel	2
6.	Meter Tape 30m	**Length:** 30 m	1
7.	Measuring Tape 3M	**Length:** 3 m	3
8.	Measuring Tape 5M	**Length:** 5 m	3
9.	Spirit Level	**Vials:**3 **Accuracy:** 0.5mm/m **Length:**300mm **Product Type:** Level	3
Safety Equipment's			
10.	Goggle	**Goggle** – Industrial Standard Make	5
11.	Apron	**Apron** - Standard Make	5
12.	Ear Muff	**Earmuff** – Industrial Standard Make	5
13.	Mask	**Mask** – Industrial Standard Make	50
14.	Fire Extinguisher	**Fire Extinguisher**– Industrial Standard Make	6
15.	First Aid Kit	**First Aid Kit** – Industrial Standard Make	2
16.	Gloves Pair	**Gloves** – Industrial Standard Make	10

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GROUP-12 ELECTRONICS EQUIPMENT'S			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Normal Oven	**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
2.	Refrigerator	**Capacity:**183L or more **Annual Energy Consumption:**148kWh/Year or less **Refrigerator Fresh Food Capacity:**165L or more **Freezer Capacity:** min 18L **Bottle Count:**5 or more **Noise Level:**40dB or less **Installation Type:** Freestanding	1
3.	Printer	**Functions:** Print, Scan, Copy **Printer Type:** Laser **Nominal Dims(mm):** 409×398.5×267Approx **Weight:**9.7Kg **Nominal Print Speed:** Upto30ppm (A4Size) **Approx Warranty:**1Year On-Site **Print Resolution:** 600×600dpi, HQ1200(2400×600dpi) Quality Approx **2Sided-Duplex- PaperType:** Plain, Thin, Recycled Approx **2Sided-Duplex-PaperSize:** A4 **Paper Handling:** Tray#1- Paper Type: Plain, Thin, Recycled Tray#1- **Max Capacity:** Upto 250Sheets (80g/m²) Approx **Paper Output:** Upto100 Sheets(80g/m²) Face Do wnTray; One Sheet Face Up Tray Approx **Copy- Colour /Mono:** Yes/Yes **Multiple Copies:** Sorts/Stacks Upto 99 Pages Approx **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:** Upto19200×19200dp iApprox **Scan- Resolution Glass:** Upto 600×2400dpi Approx **Connectivity:** Hi-SpeedUSB2.0 **Display Type:**16Chars×2Lines **Memory Capacity:** 32MB Approx **Power Source:**220-240VAC50/60Hz **Power Consumption-Ready:** Approx60W **Power Consumption-Sleep:** Approx 6.6W **Power Consumption-Off:** Approx 0.08W **NoiseLevel:**50dB(A)Approx	1

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GROUP-13 **ELECTRONICS EQUIPMENT'S** (Desktop)			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Desktop	**CPU:** INTEL CORE I7-12TH GEN or Higher **RAM:** 8GB+512GB SSD or more **Conn:** LAN+WIFI+BLUTOOTH+KEYMOUSE **Display:** 20" DESKTOP MONITOR	5

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GROUP-14 MECHANICAL CONSUMABLES			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	3D printer Filament	**Weight Kg:** 1 Approx **Melt Flow Index:** 2 (190°C/2.16kg) Nominal **Filament Length:** 330mApprox **Dim Accuracy:** +/-0.1mmApprox **Roundness Accuracy:** +/-0.5mmApprox **Spool Inner Dia:** 55mm **Nominal Spool Outer Dia:** 200mmApprox **Spool Weight:** 300gNominal **Spool Width:** 65mmApprox	10
2.	Acrylic Sheet	➢ 3mm, 4ft x 4ft ➢ 4mm, 4ft x 4ft ➢ 5mm, 4ft x 4ft	20 each
3.	Foam Sheet	➢ 8mm, 4ft x 4ft ➢ 10mm, 4ft x 4ft ➢ 12mm, 4ft x 4ft ➢ 15mm, 4ft x 4ft	2 each
4.	Ply Board	5mm, 2ft x 4ft	12
5.	Nylon Rod	10mm, 1m	5
6.	Nuts	(3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	1
7.	Bolts	(3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) dia 1" Inch Pack of 100	1
8.	Screws	(3mm,4mm,5mm) Pack of 100	1
9.	Washers	(3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	1
10.	Studs	(6mm,8mm) 1 Meter	2
11.	Nails	(1",2",3",1.5",5") Pack of 100	1
12.	Fevicol	2Kg	1
13.	2 Way Tape		10
14.	PVC Pipe	➢ .75",10ft ➢ 1",10ft ➢ 1.5",10ft ➢ 2.0",10ft	10 each
15.	Aluminium channels	➢ L - 12ft ➢ C - 12ft ➢ Box - 12ft	10 each
16.	PCB Drill Bit	➢ 0.4mm ➢ 0.8mm ➢ 1mm	10 each
17.	Drill Bit	➢ 4mm ➢ 5mm ➢ 6mm	10 each

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GROUP-15 ELECTRONICS CONSUMABLES			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Arduino	➢ UNO R3 ➢ NANO ➢ Mega	5 each
2.	Raspberry Pi	Model 4B, 4GB, Breakout board (IO, Relay)	3
3.	NodeMCU	ESP8266, Breakout board (IO, Relay)	2
4.	Development Board	ESP32, FPGA (64 Mbit, SPI Flash with 76 GPIO, 4 lane hard core)	2 2
5.	Beagle bone	Blue	1
6.	Voltage Regulator Module	3 to 32 V adjustable out put Voltage, 3A peek current, Conversion Efficiency 95% Load regulation 0.8% With LCD Disapply	2
7.	Mini Micro submersible Water Pump	Operating Voltage: 5VDC @ 1A Flow Rate: 2.5L/Min	2
8.	Piezoelectric Plate	Material: Lead zirconate titanate (PZT) or lead magnesium niobate-lead titanate (PMN-PT).	2
9.	8*8 LED Matrix Module	Operating Voltage: Typically operates at a voltage range of 3.7V to 5.3V. Power Consumption: 80mV @ 25°C	2
10.	Bluetooth	• Bluetooth protocol (Bluetooth V4.2 BR/EDR) • CPU & Memory (Dual Core, 240 MHz) • Transmit power (less than or equal to 4dBm) • Sensitivity (less than or equal to-84dBm on 0.1% Bit Error Rate) • Modulation mode (Gauss FSK (Frequency Shift Keying)) • Range (< 100m)	2
11.	7 Segment LED Display	Displays both hex and integer values Supports decimal points built into 7-Segment display, Supports both common cathode and common anode displays, Configurable for both Active High and Active Low segment and digit drives	2
12.	GSM/GPRS/GPS Module	SIM808 module : 1. Charging: Supports charging control for Li-Ion battery 2. Frequency bands: SIM808 Quad-band: GSM 850, EGSM 900, DCS 1800, PCS 1900. SIM808 can search the 4 frequency bands automatically. The frequency bands also can be set by AT command "AT+CBAND" 3. Normal operation: -40°C ~ +85°C 4. Storage temperature -45°C~ +90°C	2
13.	Laser Module	Wavelength: 650nm	2
14.	LDR Module	• Maximum power dissipation is 200mW • The maximum voltage at 0 lux is 200V • The peak wavelength is 600nm • Minimum resistance at 10lux is 1.8kΩ • Maximum resistance at 10lux is 4.5kΩ • Typical resistance at 100lux is 0.7kΩ • Dark resistance after 1 sec is 0.03MΩ • Dark resistance after 5 sec is 0.25MΩ	2
15.	4×4 Matrix Keypad	• Maximum voltage: 24VDC • Maximum current: 30mA • Interface: 8-pin access to 4x4 matrix	2

		• Dimensions: Keypad: 2.7 x 3.0 in (6.9 x 7.6 cm), Cable: 0.78 x 3.5 in (2.0 x 8.8 cm) • Operating temperature range: 32 to 122 °F (0 to 50 °C)	
16.	Joy Stick Module	Connect via USB & Bluetooth	2
17.	Active Buzzer	➢ Big ➢ Small	2
18.	Motor Driver	Operating Voltage: 5 V to 46 V Control features: • **Dual H-Bridge**: Allows control of two DC motors or one stepper motor. • **Direction Control**: Uses input pins (IN1, IN2 for Motor A; IN3, IN4 for Motor B) to set the rotation direction. • **Speed Control**: Enabled through PWM signals on the ENA and ENB pins, allowing for variable speed operation Onboard Voltage regulator, addresses heat sink	2
19.	Sound Playback Module	Embedded Flash Memory	2
20.	BO Motors	• Shaft length: 7-8.5 mm • Shaft diameter: 5.5 mm (Double D-type) • Size: 55 x 48 x 23 mm • Operating voltage: 3-12V • Current (without loading): 40-180mA • RPM: 60-200 rpm • Output torque: 0.35-0.5 kg cm	10
21.	Vibrating Motor	1. Voltage Range: DC 2.5-4V. 2. Motor Diameter: 10 mm. 3. Motor Thickness: 3.4 mm. 4. Min. Rated Speed: 9000RPM 5. Max. Rated Current: 90mA	10
22.	Capacitive Touch Switch	1. Operating voltage: + 2.7 ~ 6V 2. Working temperature: 30 ~ + 70 Celsius 3. OUT pin output voltage: + 3.3V ± 0.1V 4. OUT pin Maximum output current: 500mA	2
23.	Triple Axis Magnetometer	Frequency Response :up to 1KHz Supply voltage(V):3.3 to 5 Communication Interface:I2C & SPI	2
24.	MQ-2	• **Sensing Resistance**: 2KΩ to 20KΩ in clean air • **Sensitivity**: Adjustable through a potentiometer • **Preheat Time**: Approximately 48 hours • **Response Time**: Less than 10 seconds • **Recovery Time**: Less than 30 seconds	2
25.	MQ-3	165mA heater ON / 60mA heater off). Consumes 150mA current. Digital output Do: 0 and 1 TTL digital (0.1V and 5V).	2
26.	MQ-4	• Sensitivity: Highly sensitive to Methane (CH4) and other natural gases. • Range: Detects concentrations from 300 ppm to 10,000 ppm.	2
27.	MQ-5	• **Sensitivity Range:** Detects LPG concentrations typically from 200 to 10,000 ppm (parts per million) with sensitivity varying depending on calibration. • **Response Time:** Rapid response, usually under 10 seconds to detect gas presence. • **Working Temperature:** Generally operates safely within -10°C to 50°C.	2

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28.	MQ-7	• **Detection Range**: 10 ppm to 1000 ppm (some models up to 10,000 ppm) • **Response Time**: Approximately 30 seconds to 1 minute (to reach 90% of final value) • **Recovery Time**: About 3 to 5 minutes after exposure • **Operating Voltage**: 5V DC power supply, with heater voltage cycling between 5V (high) and 1.4-1.5V (low) to enhance sensing accuracy	2
29.	Ultrasonic Sensor Module	• Working Current: 15mA • Working Frequency: 40Hz • Ranging Distance: 2cm – 400cm/4m • Resolution: 0.3 cm • Measuring Angle: 15 degree • Trigger Input Pulse width: 10uS	2
30.	Triple Axis accelerometer	• **Bandwidth**: Configurable from 0.5 Hz to 1600 Hz (X and Y axes), up to 550 Hz (Z axis) via external capacitors.	2
31.	PIR Motion Detector Module	• **Delay Time:** Adjustable delay or hold time of motion detection output, ranging from about **5 seconds up to 300 seconds** (5 minutes), configurable via onboard potentiometer.	2
32.	Relay Module	5V, 10Amp, 4 Channel	2
33.	Sensor	➢ Pulse Rate Heart ➢ Soil Moisture ➢ Touch ➢ Rain Drop ➢ Flex ➢ Temperature ➢ Force Pressure ➢ Colour Recognition ➢ Water Flow ➢ Sound ➢ IR Sensors (Obstacle Sensors) ➢ Humidity	10 each
34.	IR Sensor Array for Line Following	• **Sensor Pitch (Distance between sensors):** Approximately 15 mm (0.375 inches) for effective spatial resolution of the line or track. • **Operating Voltage:** Generally between 3.3 V to 5 V, compatible with common microcontrollers like Arduino, Raspberry Pi, or ESP32. • **Current Consumption:** Around 100 mA total, with IR LEDs arranged in pairs to reduce individual current draw.	2
35.	RFID Reader-Tags	Operating frequency 13.56 MHz, ISO/IEC 15693 standard modules	2
36.	RF Modules Tx& Rx 315 MHz ASK	• **Data Transfer Rate**: Approximately 4KB/s to 10 Kbps • **Antenna**: External wire antenna (typically 25–32 cm, single or multi-core line) to improve range • **Range**: Varies from 20 meters to 200 meters in open space, depending on voltage and antenna quality	2
37.	Stepper motor with Driver Board	• **Current Per Channel**: Up to 500mA per Darlington transistor channel • **Interface**: Four inputs connected directly to microcontroller GPIO pins, outputs drive stepper coils	2
38.	Servo Motor	➢ 360 rotations ➢ 180 rotations	10 each
39.	Metal Gear Servo Motor	(180° Rotation)	10
40.	Solder Wire	100grm	10

41.	Solder Flux		10
42.	Solderless Breadboard	➢ 830 Points ➢ 400 Points	10 each
43.	Copper Clad Board	➢ Single side ➢ Double side	25 each
44.	Breadboard Jumper	➢ Male to Male ➢ Female to Female ➢ Male to Female	20 each

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GROUP-16 Other Equipments			
Sl. No	**Equipment Name**	**Specifications**	**QTY**
1.	Sublimination	6 in1Sublimation Machine Print Pack Sublimation Printer EPSON L-130 Modified Sublimation Ink Set Paper & Tape for T-Shirt, Coffee Mug, Dish, Pillow cover Printing. LC Professional Photo Paper Cutter for Photo Studio, Office, Home, Craft (A4, B5, A5, B6, B7) White Guillotine Paper Trimmer	01

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Terms and Conditions

The following Terms and Conditions apply to all bidders participating in the tender for supply, installation, and commissioning of equipment, tools, and machines for the establishment of the Boeing-RVCE-AICTE IDEA Lab. All vendors are required to carefully read and comply with these conditions.

1. General Information

- Supply must strictly adhere to quantities and specifications mentioned in the Purchase Order.
- Delivery location: ***RV College of Engineering, RV Vidyanikethan Post, Mysuru Road, Bengaluru – 560059.***
- Contract validity: **3 months** from the date of award.
- Quotation validity: **90 days** from submission date (mandatory).

2. Bid Submission Guidelines

- Bids to be submitted in **hard copy only** on official letterhead, duly signed by an authorized representative.
- Each bid must be complete and include the following:
  - Company profile highlighting experience & competencies.
  - Registration Certificate of firm/company.
  - Valid GST Registration & latest GST return proof.
  - PAN Card copy.
  - CA-certified audited balance sheets for last 3 financial years.
  - Work completion/experience certificates for similar projects.
  - Escalation matrix for service & after-sales support.
  - Latest Income Tax Return acknowledgements.
  - Signed & stamped tender document (including amendments & deviation sheets, if any).
  - Declaration of compliance with specifications on company letterhead.
  - Supporting documents for technical eligibility.
- Partial quotations or item-wise bids will be rejected.
- Only **one quotation per package (Group)** is permitted; multiple submissions will lead to disqualification.

3. Technical Documentation & Compliance

- Provide complete technical documentation including:
  - Product specifications.
  - Installation, operation, and maintenance manuals.
  - Original/scanned brochures/catalogs.
- OEM product page links to be provided where available.
- Clearly state make, model, and full technical details of each item.
- Submit a signed compliance sheet against each technical requirement.

4. Eligibility & Qualification

- Bidders must be OEMs or authorized distributors/partners (with valid authorization letter).

- At least **3 purchase orders** in the last 5 years for similar equipment supplied to academic/R&D/industrial institutions.
- Provide references of **minimum 5 institutional clients** with contact details.
- Mandatory presence of a registered support office in India for warranty & after-sales support.
- Imported equipment must be backed by OEM/authorized seller certification confirming service support in India.
- OEM declaration required confirming availability of spare parts for at least **1 year**.

5. Financial Criteria

- Quoted prices must be **all-inclusive**: taxes, transportation, insurance, packaging, unloading, installation, commissioning, and training.
- No additional claims post-bid finalization.
- Prices must remain **firm & fixed** for the contract duration; no escalation allowed.

6. Evaluation & Award of Contract

- Evaluation based on:
  - Compliance with specifications.
  - Completeness of documents.
  - Financial eligibility.
  - Price competitiveness.
- Contract awarded to the technically compliant bidder with the most competitive price.
- Purchaser reserves the right to reject any/all bids without assigning reasons.
- Purchaser's decision will be final and binding.

7. Payment Terms

- Payment released only after **successful supply, installation, and commissioning.**
- Final inspection & acceptance by Purchaser's Technical Committee.
- No payment for damaged, non-functional, or non-compliant items.
- Mandatory documents for payment: delivery challans, installation report, warranty documents, training certificate, and invoice.

8. Installation & Training

- Vendor must ensure timely delivery, installation, and commissioning with all necessary accessories.
- Comprehensive **on-site training** must be provided to faculty, staff, and students, covering:
  - Equipment operation.
  - Safety protocols.
  - Calibration & maintenance.
- User manuals/guides must be provided in both **hard & soft copies**.

9. Warranty & After-Sales Service

- Minimum **3-year onsite warranty** from date of installation.
- Technical support to be provided within **48 hours** of complaint.
- Free repair/replacement of defective items during warranty (including transport & labor).

- Delays or service failures may invite penalties or vendor disqualification from future procurements.

10. Delivery Timeline

- All equipment must be delivered, installed, and commissioned within **6–8 weeks** from the date of issue of the Purchase Order (unless otherwise specified).
- Vendors must provide a clear **delivery schedule along with their bid**.
- Any delay beyond the agreed timeline will attract penalties as per purchaser's discretion, including but not limited to deduction of payment, liquidated damages, or cancellation of order.

11. Other Conditions

- No preference based on category/class/affiliation.
- Procurement may extend to future phases depending on funds/requirements.
- Delayed delivery/installation may result in penalties or cancellation of order.
- Full compliance with BoQ and specifications is mandatory; partial bids/deviations will not be accepted.

Co-coordinator:
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e-Tender Notice

RV College of Engineering, Bengaluru, in collaboration with Boeing and AICTE, is in the process of establishing the **Boeing-RVCE-AICTE IDEA Lab** at our campus to promote innovation, design thinking, and prototyping skills among students and faculty.

The following list of equipment is proposed to be procured through the **E-Tender process.** Interested and eligible suppliers, manufacturers, and authorized distributors are invited to apply online for individual equipment as per the specifications provided in the tender documents.

- **Tender Opening Date:** [To be notified]
- **Last Date for Submission of Bids:** [To be notified]
- **Tender Link (E-Tender / GeM Portal):** The official link will be intimated here shortly.

Vendors are requested to carefully review the specifications, terms, and conditions before submission and ensure full compliance with the tender requirements.

For any clarification, you may contact the undersigned:

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Sl. No	Equipment Name	Specifications	QTY
		DIGITAL FABRICATION	
1.	CNC Router	**Working Area:** 1500 x 3050 mm **Z Axis Working Area:** 200 or above Resolution: ±0.03/300mm 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 **Industrial Chiller:** Yes (Compressor based)	01