

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
1	Molecular Model Kit -Z119660, -KGaA
2	CNC Lathe Machine Model No - Lab Turn 2028 -KNUTH
3	Laboratory Trolley WP 300.09, 3 Storage drawers, 3 Retractable sockets, L×W×H: 1530×790×830 mm, Weight approx. 80 kg
4	Desktop 3D Printing Machine -A30 -Geeetech FDM, Build volume: 320×320×420 mm, Printing speed: 80–110 mm/s, Nozzle dia.: 0.4 mm, OS; Window, MAC, Linux, DC 12V/41A, 3.2" Full-color touch screen, Frame: Aluminium profile, Wifi, USB, SC Card, Dimension: 508×615.5×630.5 mm, Machine net weight: 10.12 kg
5	Flat Bed CNC Lathe Machine -CK6150 Spindel speed: 150–1600 rpm, X-axis travel: 330 mm, Z-axis travel: 500/750/1000/1500 mm, X/Z rapid speed: 5/8 m/min, Max section of tool: 25×25 mm, Tool post: 4 or 6 or 8 position. Main motor power: 7.5kW or 11kW, Overall size (L×W×H) 2100/2420/2860/3320×1600×1830 mm, Net weight: 2700/2750//3100/3350kgs

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1	2
6	<p>DC ARC Welding Machine</p> <p>Model:RH-4693,</p> <p>Brand: Ronix</p> <p>Input capacity: 8.2kVA, Duty cycle: 35%, Actual current: 200A,</p> <p>Size: 38×28×20 cm, Weight: 4.8 kg</p>
7	<p>Maintenance Kit containing Leakage Detector</p> <p>- T/KIT2,</p> <p>-Edibon.,</p> <p>High sensitivity mode to locate small leaks. Audio and visual (LED) leak indicator. 400 mm gooseneck reaches awkward areas.</p> <p>Response time: 1s. Operating temperature: 0°C – 40°C.</p> <p>Dimensions: 180 x 70 x 35 mm approx. Weight: 0,5 kg approx.</p>
8	<p>Bench Vice (4 in)</p> <p>Code: 53004, HC112B, Brand: Pumpkin, SKU 1102031001015, Size: 4 in</p>
9	<p>Seven Drawers Tools Cart, 213 pcs</p> <p>-95107</p> <p>High-strength Structural Design, High Quality Rails, Overall Rated Load: 300 kf, Total: 213 Pieces Tools</p>
10	<p>Cut Off Machine</p> <p>-KD-355GS,</p> <p>- KANDO</p> <p>SKU: 2000000213361, Size: 14 inch</p>

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11	<p>Drilling Machine</p> <p>- KC10, -Vietnam</p> <p>Hong Ky, Drill Route: 70 mm, Drill Bit Diameter: 3-16, Speed Stage: 315-450-480-560-685-635-1150-1135-1520, Motor: 375WW-1Phase-4P, Machine Size: 700×350×1000, Weight: 65 kg</p>
12	<p>CNC Lathe Machine</p> <p>Model No - CLT100</p> <p>Description of Equipment - Belt Type : Flat / 45 Degrees Slant, Maximum Turning Diameter : 50 mm, Maximum Turning Length : 250 mm, Distance between Centre : 320 mm, Spindle Motor : AC Motor, 2 HP, Number of Stations : 8, Feed Rate : 0 to 1,200 mm/min, Positioning : 0.010 mm, Control System : PLC Based Control System, Dimension in mm : 1480 x 800 x 1200 mm</p>
13	<p>" CNC Trainer Mill Machine</p> <p>Model No - MT250 Description of Equipment - 4th Axis Provision : provided, Distance between Table top and Spindle Nose : 70 - 370 mm, Feed Rate : 0 to 1,200 mm/min, X Axis : 300 mm, Y Axis : 225 mm, Z axis: 250 mm, Table Size: 600 ×160 mm, Spindle Motor Capacity : 2 HP (AC), Positioning : 0.015 mm, Dimension in mm : 1540 x 1200 x 1700 mm</p>
14	<p>Bench Drill (Model No - SBD1601)</p> <p>Diameter:16mm , Rated Input Power:550W, No Load Speed:192-2747r/min, Machine Height: 975mm</p>

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15	Color Laser Printer 21ppm (mono/colour), 10.4/1.5 sec (mono/colour)1200x1200 dpi, 1 GB,UFR II, PCL 6 Gigabit Etherner, Wireless, Direct Connection
16	High Quality Lab Corn Grain Seeds Moisture Tester
17	JJRC H36 RC 2.4GHz 4CH 6 Axis Gyro RC Quadcopter
18	Crack depth meter RMG 4015 -RMG reference block -Crack depth probe RMSQ Ó -Crack depth probe RMSL-S 90` -Set of 8 Contact pins (standard) -Set of 8 Contact pins (needle) -Polishing fleece for reference block
19	PC Control Dynamic Strainmeter DC-004p DC-004p 4 channels 20,000 x 10 ⁻⁶ (at 2 V excitation) 80,000 x 10 ⁻⁶ (at 0.5 xexcitation) DC to 2 KHz 120 ,350 (Full bridge) 120 (W) x 50(H) x 180(D) DC 10 to 16 V 0.3 A Max
20	Smart dynamic Strain recorder (DC-204R/DC-204 Ra) DC- 204R/DC-204 Ra 4 channels 120 to 100 (Full bridge), 84 (W) x 42(H) x 157(D) mm,DC to 10 KHz (-3 dB ± 1 dB)

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21	<p>Multi Channel Dynamic Strainmeter</p> <p>DS-50A</p> <p>Type DS-50A</p> <p>Number of Channels 50 Channels</p> <p>Synchronization Maximum 20 sets(1000 Point)</p> <p>Sampling Speed 1 to 1000 MLs</p> <p>Interface LAN (100 BASE-TX)</p> <p>External dimensions 420 (W) x 110(H) x 298(D) mm (excluding projected parts)</p>
22	<p>Handheld Dynamic Strainmeter DH-12 A</p> <ul style="list-style-type: none"> -Simultaneous Sampling of 4 channels - Measured data indicated by waveform - ECO mode (power saving mode)equipped -Powered by 4AA alkaline batteries - Measured data conforms to DISP format - TEDS Compatible <p>Type DH-14 A</p> <p>Measuring Object Strain DC Voltage</p> <p>Number Channels 4 channels</p> <p>Measuring range ($\pm 20000 \times 10^{-6}$ Strain)</p> <p>($\pm 80000 \times 10^{-6}$ Strain)</p> <p>Frequency response DC to 1KHZ</p>

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23	<p>High Sensitive Acceleration Transducer</p> <p>ARS 10 A 10 M/s²</p> <p>Approx.15m V/V (30000x 10⁻⁶ Strain)</p> <p>1%RO -10 to +50 C</p>
24	<p>Head Phone</p> <p>Logitech H-390 TECHNICAL SPECIFICATIONS</p> <p style="padding-left: 40px;">Input Impedance: 32 Ohms</p> <p style="padding-left: 40px;">Sensitivity (headphone): 94dBV/Pa +/- 3 dB</p> <p style="padding-left: 40px;">Sensitivity (microphone): -17 dBV/Pa +/- 4 dB</p> <p style="padding-left: 40px;">Frequency response (Headset): 20 Hz – 20 kHz</p> <p style="padding-left: 40px;">Frequency response (Microphone): 100 Hz -10 kHz Cable length: 7.64 ft (2.33m)</p> <p style="padding-left: 40px;">Connections: USB-A compatible (1.1, 2.0, 3.0)</p>
25	<p>Temperature Humidity Pressure Sensor</p> <p>Adafruit BME280 I2C or SPI – STEMMA QT Product Category: Pressure, Temperature and Humidity Sensor</p> <p>Minimum Operating Temperature (°C): -40 Maximum Operating Temperature (°C): 85 Packaging: Tape and Reel</p> <p>Mounting: Surface Mount</p> <p>Package Height: 0.93</p> <p>Package Length: 2.5</p> <p>Package Width: 2.5</p> <p>PCB changed: 8</p> <p>Lead Shape: No Lead</p>

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26	<p>Thermocouple Temperature Sensor</p> <p>MAX6675 K-type</p> <p>Operating voltage: 3.0 ~ 5.5V</p> <p>Internal integrated cold junction compensation circuit;</p> <p>With a simple three serial interface;</p> <p>Temperature signal can be converted into 12-bit digital</p> <p>Temperature resolution of: 0.25 Degree;</p> <p>Cold junction compensation range: -20 ~ +80 Degree,</p> <p>Embedded thermocouple break detection circuitry.</p> <p>Using SPI 3 wire communication</p> <p>K-type temperature probe</p> <p>Type K temperature range 0-800 degrees</p>
27	<p>Board Mount Pressure Sensor</p> <p>Company: Honeywell</p> <p>SSCMRRN005PD7A3</p> <p>Device Pressure Type: Differential</p> <p>Operating Pressure Range: -5psi to 5psi</p> <p>Maximum Overload Pressure: 30psi</p> <p>Equivalent Overload Pressure Range (psi) : 20 to 100 ,Accuracy (%) : ±0.25</p> <p>Response Time (ms) : 0.46</p> <p>Minimum Operating Supply Voltage (V) : 3</p> <p>Typical Operating Supply Voltage (V) : 3.3</p> <p>Maximum Operating Supply Voltage (V) : 3.6</p> <p>Maximum Supply Current (mA) : 2.1</p> <p>Minimum Operating Temperature (°C) : -40</p> <p>Maximum Operating Temperature (°C) : 85</p>
28	<p>Arduino Mega 2560 REV3</p>

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29	Arduino UNO WiFi REV2 [ABX00021]
30	<p>Function generator</p> <p>[Keysight 33120A]</p> <p>Waveform length 8 to 16,000 points</p> <p>Amplitude resolution 12 bits (including sign)</p> <p>Sample rate 40 MSa/s</p> <p>Non-volatile memory Four (4) 16,000 waveforms</p> <p>Sine 100 μHz - 15 MHz</p> <p>Square 100 μHz - 15 MHz</p> <p>Triangle 100 μHz - 100 kHz</p> <p>Ramp 100 μHz - 100 kHz</p> <p>White noise 10 MHz bandwidth</p>
31	<p>Laser Doppler Vibrometer System</p> <p>[OMS LaserPoint LP01-HF]</p> <p>Velocity Range</p> <p>5 μm/s to 800 mm/s</p> <p>Vibration Frequency Range</p> <p>0.01 Hz to 100 kHz</p> <p>Working Distance</p> <p>1 cm to 5 m</p> <p>Displacement Range</p> <p>0.04 nm (at 20 kHz) to 12 mm (at 10 Hz)</p> <p>Optics</p> <p>Collimated (No Focusing Needed)</p> <p>Surface Reflectivity</p> <p>Realistic Surfaces</p> <p>Signal Output</p>

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32	Canon NF 269DW, All in one (Scan, Print, Copy, Duplex, Wifi), 600 x 600 dpi, 1,200 x 1,200 dpi (eq.) 2,400 (eq.) x 600 dpi, Device Memory 256 MB, 6-line Monochrome LCD Touch Screen Display, USB 2.0
33	Autotronic Simulator: Engine Sensors and Controls AM05De Lorenzo Simulator to simulate:Temperature sensors , Pressure sensors , Air flow rate sensors , Position sensors , Coils ,Rpm/reference point sensors , Knock sensors , Oxygen sensors, Level Sensors, Inertial sensors ,Electro pumps and geared motors , Servomotors , Electro valve, Electro injectors. CAI Software and the supported documentation guides the students to the study and the performance of the simulation exercises

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34	<p>Free and Force Convection</p> <p>-TH320</p> <p>-: Essom</p> <p>TYPICAL EXPERIMENTS</p> <p>Principles of free and forced convection.</p> <p>Heat transfer in flat plate, cylindrical and finned surfaces.</p> <p>Temperature distribution on cylindrical and finned surfaces.</p> <p>Outlet air temperature distribution.</p> <p>Calculations of heat transfer coefficient, efficiency and heat transfer rate.</p> <p>TECHNICAL DATA</p> <p>Duct</p> <ul style="list-style-type: none">- Cross section 120 x 120 mm <p>Heater</p> <ul style="list-style-type: none">- Capacity 320 watts

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35	<p>Control Interface for Heat Transfer Series (common for all available modules type "TXC") - TSTCC/CIB,Brand- EDIBON</p> <p>DAB. Data Acquisition Board: Common for the modules type "TXC". PCI Express Data acquisition board (National Instruments) to be placed in a computer slot. Bus PCI Express. Analog input: Number of channels= 16 single-ended or 8 differential.Resolution=16 bits, 1 in 65536. Sampling rate up to: 250 KS/s (Kilo samples per second).Input range (V)= 10V.Data transfers=DMA, interrupts, programmed I/O. Number of DMA channels=6.Analog output:Number of channels=2.Resolution=16 bits, 1 in 65536. Maximum output rate up to: 900 KS/s. Output range(V)= 10V.Data transfers=DMA, interrupts,</p>
36	<p>Polar Robot and Robotic Principles Specfication- 3 degrees of freedom Movement range on roll (0-90), Movement range on elbow (180mm), Movement range on z-axis (50mm), Electric vaccum pump gripper, Roll and Elbow motor type (DC motor), Resolution (+,- 1mm), Input Voltage 15VDC (110-230 VAC external switching supply), General dimensions(610*510*470mm), Computer- machine connection (USB)Model No. TP-3711</p>

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37	<p>Air Pressure control Trainer</p> <p>Specifications-</p> <p>system dimension:4.5ftX1.5ftX4.5ft (H),working pressure:7.8kg/cm³</p> <p>Air compressor motor:1 HP, Electric supply:230V AC</p> <p>Approx.Rs95000/piece</p> <p>-SAP</p> <p>-PCST-03B</p>
38	<p>Temperature Measurement Trainer (Model: UITM-03)</p> <p>Specification:</p> <ul style="list-style-type: none"> • UITM-03 MODELS: UITM-03- Combination of RTD, • Sensors: Thermocouple - Fe-K (J type) R. T. D. - PT-100 <p>Thermistor - 5Kohms (-ve coefficient)</p> <ul style="list-style-type: none"> • Max. Temperature: 1000 C. • Probes: Sensors are housed inside 6mm dia SS tube of 6 length • Source Temperature: A glass thermometer to read up to 1100 C, • Display: 3 1/2 digit digital LED display of 200mVFSD, • Power Supply: 230V 50Hz

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39	<p>Pressure Measurement Trainer (Model: UITM-05)</p> <p>Specification:</p> <ul style="list-style-type: none"> • Pressure max. 7Kg/cm² • Dial gauge: Bourdon tube pressure gauge of 10 Kg/cm², Range 10kg/cm² • Strain gauges: 350 ohms resistance, gauge factor 2 – 2.1, Excitation Voltage:10 V, Accuracy: 1% • Resolution: 0.01 Kg/Cm², • Operating Temperature: 5 to 55o C, Connection: 2 mt 4 core shielded cable with connectors, • Power Supply: 230 V +/- 10% 50 Hz
40	<p>Basic Hydraulic Bench</p> <p>Pump features:</p> <ul style="list-style-type: none"> - Maximum gauge head: 23 MWC - Volume 10 / 160 l/min - H 21 / 10 MWC - Power consumption: 750 W (1HP) - Motor speed: 2.900 rpm <p>Tanks:</p> <ul style="list-style-type: none"> - Sump tank capacity: 100 liters - Level measurement by vertical gauges and sight tubes. <p>Volumetric tanks storage capacity:</p> <ul style="list-style-type: none"> - From 0-8 liters -From 0-40 liters

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1	2
41	<p>Solar Energy Trainer</p> <ul style="list-style-type: none"> -Two modes for study: characteristics and application - On board voltmeter and - Fits on the desktop - 6 Solar Cells - Chargeable batteries
42	<p>Wind Power Trainer</p> <ul style="list-style-type: none"> • Two modes: measurement and application • On board voltmeter and ammeter • Portable • Easy set-up • Chargeable batteries
43	<p>Indoor Solar Energy Training System(IRE 250)</p> <p>Technical Data</p> <p>Solar Module:</p> <p>Number of Panels: 2</p> <p>Number of cells: 36 per panel</p> <p>Module area: 0.64m² per panel</p> <p>Max. Output: 100 W per panel</p> <p>Short-circuit current: approx. 6.20 A per panel</p> <p>Open-circuit voltage: approx. 21 V per panel</p> <p>PWM Charge Controller</p> <p>Input: 12V,30A</p> <p>Inverter</p> <p>Input: 12V DC,500W AC 220V</p> <p>Battery: 12V</p> <p>Power Meter: AC 220V, 5A</p>

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44	<p>Outdoor Solar Energy Training System (IRE-251)</p> <p>Technical Data</p> <p>Solar Module:</p> <p>Number of Panels: 2</p> <p>Number of cells: 36 per panel</p> <p>Module area: 0.64m² per panel</p> <p>Max. Output: 100 W per panel</p> <p>Short-circuit current: approx. 6.20 A per panel</p> <p>Open-circuit voltage: approx. 21 V per panel</p> <p>MPPT Charge Controller</p> <p>Input: 35~90 VDC, 7A</p> <p>Inverter Input: 24V DC,Output: 220V AC</p> <p>Battery: 24V,Volt meter: 500V DC</p> <p>Current meter: 5A DC</p> <p>Temperature Indicator: -199.9o~999.9o C</p>

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1	2
45	<p>Solar Thermal Energy Training System (IRE-271)</p> <p>Technical Data</p> <p>Flat collector</p> <p>Tilt angle: -70~+70o</p> <p>Obsorbing surface area: 0.194m2</p> <p>Lighting unit</p> <p>Artificial light source, comprising many lamps .</p> <p>Light intensity via ON/OFF type control in 6 selection and adjustable tilt angle control.</p> <p>Pump</p> <p>Adjustable flow: 0~12L/h</p> <p>Measuring ranges</p> <p>Temperature: -100~400°C x 5,Flow: 0~20L/h</p> <p>Illuminance: 0~1500</p> <p>Software IRE-271SW (optional)</p>

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46	<p>Wind / Solar Hybrid Energy System (IRE-270)</p> <p>Technical Data</p> <p>Solar Module</p> <p>Number of cells: 36 per panel</p> <p>Module area: 0.64m² per panel</p> <p>Max. Output: 100 W per panel</p> <p>Short-circuit current: approx. 6.20 A per panel</p> <p>Open-circuit voltage: approx. 21 V per panel</p> <p>Wind Turbine</p> <p>Rated power: 100 W, Rated voltage: 24 V AC</p> <p>Rated wind speed: 13 m / s</p> <p>Wind wheel diameter: 1.2 m</p> <p>Number of Blades: 3</p> <p>Wind power and type: Three-phase AC permanent magnet synchronous generator</p>
	<p>PV input current range: 0~30A</p> <p>PV voltage range: 17~20V DC</p> <p>Max. Output current: 10A</p> <p>Light: 1000W</p>

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47	<p>Solar Tracking Control Trainer (IRE-272)</p> <p>Technical Data</p> <p>Solar tracking control: Solar cell voltmeter</p> <p>Terminal box unit:DC output (motor)</p> <p>Irradiation sensor,CDS sensor output</p> <p>Motor control (horizontal vs. vertical)</p> <p>Limit control (horizontal vs. vertical)</p> <p>DC 24V input,Solar cell unit:</p> <p>40W solar cells (20W x 2ea)</p> <p>DC geared motor,Software IRE-272SW</p>
48	<p>C2000 Calorimeter</p> <p>Basic Version, C5010 set of two decomposition vessels, KV 600 digital water supply, PR29 pressure gauge, Oxygen, C710.2 set of VA combustion, Crucibles, C5010s crucibles Holder, Large, Free installation and Training</p>
49	<p>Engine Crane, Model: H2T</p> <p>Capacity: 2 Ton</p> <p>Lifting Height: 2380mm</p> <p>Height of Crane: 1450mm</p> <p>Length of Crane: 1550mm</p>
50	<p>Diesel Engine Compression Tester Kit:</p> <p>-JTC1364</p> <p>- JTC</p> <p>Gauge range: 0-1000 psi/ 0-70 bar in cluded 13 items</p> <p>Application: BMW, MERCEDES-Benz, ISUZU,TOYOTA,NISSAN, MITSUBISHI</p>

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51	<p>Fuel Pump Pressure Tester Kit:</p> <ul style="list-style-type: none"> - N/A -LTMS <p>Dual gauge readings: 0–100 psi/0–7 Bar</p>
	<p>Complete with a Student Navigator software that allows students to perform their learning activities through a Personal Computer, without the need for any other documentation</p>
52	<p>Heat Transfer Experiments Base Unit</p> <ul style="list-style-type: none"> - Self-contained benchtop base unit with four optional experiments. -Easy-to-use fitting with self-sealing connectors - Clear digital displays of all readings - Experiments each have a bedplate with a clear schematic diagram to show students how they connect, and the measuring point positions
53	<p>Static and Dynamic Balancing</p> <ul style="list-style-type: none"> - Interlocked transparent dome allows students to observe the masses rotating. - Demonstrates balancing a horizontal shaft with two, three or four rotating masses - Independent analysis of static and dynamic balancing - Includes four removeable rotating masses (balance blocks) with different inserts for arange of moments - Protractor, horizontal scale and sliding indicator to help accrately position the ratating masses

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54	<p>On Board Diagnostic System(OBD II) FCAR F7S G (12V/24V)(China)</p>
55	<p>TM 632 Centrifugal Governor "DC Moter Max power 35W Speed Control 60....400min⁻¹ Proell Governor - Sleeve mass : 3x100g - centrifugal mass : 2x 150g Porter Governor - Sleeve mass : 3x100g - centrifugal mass : 2x 400g Hartnell Governor - 2 compression springs,adjustable proload - centrifugal mass : 2x 150g Measuring Ranges - Speed 0....600min⁻¹ 230V ,50Hz , 1 Phase</p>

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56	<p>Dynamic behaviour of multistage planetary gears</p> <p>GL 212</p> <p>"2-Stage planetary gears</p> <ul style="list-style-type: none">- Module :2mm- sun gear : 24 tooth , d – pitch circle :48mm- plate gear : 24 tooth , d – pitch circle :48mm- ring gear : 24 tooth , d – pitch circle :48mm <p>Measuring Ranges</p> <ul style="list-style-type: none">- Speed 0....2000min-1 <p>230V ,50Hz , 1 Phase</p> <p>LxWxH:950 x 600 x 1700mm</p> <p>Weight : approx. 150kg"</p>
57	OBD (II) EFI engine Scanner

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58	<p>Universal Milling Machine with digital 3-axis position display</p> <ul style="list-style-type: none"> - MT 200 - OPTIMUM <p><u>Technical Data</u></p> <p>Drive Motor - 4 kW</p> <p>Coolant Pump Motor - 90 W</p> <p>Horizontal and vertical spindle seat ISO 50 DIN 2080,X axis ,Travel 1209 mm</p> <p>Max Feed Automatic 380 mm/min</p> <p>Max rapid motion 1290 mm/min</p> <p>Y axis ,Travel 280 mm</p> <p>Max Feed Automatic 380 mm/min</p> <p>Max rapid motion 1290 mm/min</p> <p>Z axis ,Travel 400 mm</p> <p>Max Feed Automatic 127 mm/min</p>
59	<p>BASIC Mechanism system(Clutche and Brake)</p> <ul style="list-style-type: none"> - Anshuman - XPO- BMS 3and4 <p>Clutch Assembly Brake Assembly</p>
60	<p>Expansion of a Perfect Gas</p> <p>Brand Name -Tecquipment, Model - TD1004V , Country Of Origin - UK</p> <ul style="list-style-type: none"> - Software VDAS -B (mkII) - Laptop (Windows 10, Coiei7, 10 gen;,500 GB HDD)

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61	<p>Heat Exchanger Service Unit</p> <ul style="list-style-type: none"> - PA Hilton - H102 - 11 types of heat exchanger H 102 Service Unit - safe and suitable for unsupervised student operation - responds rapidly to control changes - negligible operating and maintenance costs - optional computerised data acquisition upgrade
62	<p>Plate Heat Exchanger</p> <ul style="list-style-type: none"> -PA Hilton/H102 - Conduct an energy balance across plate exchanger - Calculate the overall heat transfer coefficient - Demonstrate the difference between Counter- Current flow and Co-current flow
63	<p>Governors with VDAS -B (mkII)</p> <ul style="list-style-type: none"> - Tecquipment - TM1027 , - 3 types of Governor - Software VDAS -B (mkII) - Laptop (Windows 10, Coiei7, 10 gen,;500 GB HDD)

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64	Wind Energy Trainer GES 200 -K&H -GES-200 -Wind energy base plate (GES-28001) -Vertical axis wind turbine (GES-28002) -Horizontal axis wind turbine (GES-28003) -Anemometer(GES-28004) -Wind energy module (GES-23001), - PC: Core i 7 , 10 Gen, 64 Bits, 4-GB Ram, 1 GB more Free Disk Space, Window 10)
65	CNC Milling Machine -(DENFORD VMC 1300/1300 PRO)(VMC1300,VMC1300PRO)
66	Centrifugal Pump Characteristics De Lorenzo DL DKB032_220
67	Centrifugal governor Model : TM 632/Brand : GUNT
	DC motor/max. power: 35W/Speed control: 60...400min ⁻¹ /Proell governor/sleeve mass: 3x 100g/centrifugal mass: 2x 150g/Porter governor/sleeve Hartnell governormass: 3x 100g/centrifugal mass: 2x 400g/2 compression springs, adjustable spring preload/Measuring ranges/speed: 0...600min ⁻¹ /230V, 50Hz, 1 phase
68	Tachometer Model : testo 470/Brand : Testo/Country of Origin : Germany

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1	2
	<p>Display type: LCD /Display size: one line/Display function: 5 digit LCD display/Measuring range:1 to 99999 rpm/Accuracy: $\pm 0.02\%$ of mv/Resolution: 0.01 rpm (1 to 99.99 rpm), 0.1 rpm (100 to Measuring range:0.1 to 19999 rpm Accuracy: $\pm 0.2\%$ of mvtesto 470 tachometer with SoftCase, reflective markers, adapter, probe tip, wheels 0.1 m and 6",batteries, transport case</p>
69	Digital Anemometer
	GM-8901/ Benetech
	<p>Air velocity &Temperature measurement , Max, Min /Average/Current reading, °C/ °F temperature unit selection, Five units of air velocity: M/s, Km/h, ft/min, Knots, mph, Data hold, LCD backlight display, Manual/ Auto power shut off, Beaufort Scale indication, Wind chill indication, Low battery indication. Measurement range – air speed: 0 M/s to 45 M/s, 0 Ft/min to 8800 Ft/min, 0 to 88 knots, 0 Km/h to 140Km, 0Mph to 100 Mph, Temperature measuring ranges: 0°C to 45 °C, 32°F to 113°F ,Power supply: 9 V battery – supply ,Dimension: 145 × 65 × 29 mm, Fan weight: 276 g- with battery.</p>
70	Humidity & Temperature meter
	Model : GM-1361/Brand :Benetech/Country of Origin : China

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
	<p>LCD display, Humidity & temperature measurement, MAX, MIN measurement, Data hold, °C/ °F, Low battery display, Auto Power off, Measurement range: Temperature: -10 °C - 50°C (14°F - 122°F) Humidity: 5%RH -98%RH, Accuracy: Temperature: ±1°C(±1.8°F), Humidity: ±3%RH (in 25°C, 30 - 99%RH) ±5%RH (in 25°C, 10 - 30%RH) Resolution: Temperature 0.1°C/0.1°F, Humidity: 0.1%RH, Sampling time: 2.5 times/sec, Operation condition: Temperature: 0 °C - 50°C (32°F - 122°F) Humidity: <98%RH, Power supply: 9 V battery, Storage condition: Temperature: -10 °C - 60°C (14°F - 140°F), Humidity: 0%RH - 99%</p>
71	<p>GOVERNORS (TM 1027) BRAND-Tecquipment(TQ) SPECIFICATIONS -Interchangable governors including Hartnell , Porter and Proell Governors -Spring -Fly Ball (i)VDAS mkII (BENCH MOUNTED VERSION) (BDAS-B(mkII)) (ii)BRAND-Tecquipment(TQ) -Bench Top Unit (iii)Laptop Computer Core i7,500GB,Ram2GB,Graphic 2GM Miniun Requirement</p>
72	<p>SIMPLE AND COMPOUND PENDULUMS (TM-161) BRAND-Tecquipment(TQ) -Base Plate , Hexagonal Tool , Nylon Cord , Stopwatch , Rule, Simple Pendulum Spheres of Different Masses</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
73	<p>VENTURI FLOW METER (H40 B)</p> <p>BRAND–Tecquipment(TQ) NETT DIMENSIONS AND WEIGHTS: 750 mm high x 900mm long x 300mm front to back and 9 kg (including nozzle flow meter) APPROXIMATE PACKED VOLUME AND WEIGHT: 0.4 m3 and 16 kg</p>
74	<p>THICK CYLINDER (SM1011)</p> <p>BRAND–Tecquipment(TQ)</p> <p>SPECIFICATIONS ,DIMENSIONS : 700 mm x 400 mm x370 mm NETT WEIGHT : 30 kg, BENCH SPACE NEEDED: 1 m x 0.6 m OIL : Caster oil,CYLINDER MATERIAL : Aluminium alloy NOMINAL CYLINDER DIMENSIONS:203 mm long, 150 mm outside diameter, 37 mm inside diameter PRESSURE:Displayed by Bourdon guage with output for VDASSTRAIN:Measured by electrical resistance guages and displayed</p>
	<p>digitally with output for VDAS</p> <p>(i) VDAS mkII (BENCH MOUNTED VERSION), (VDAS-B(mkII))</p> <p>BRAND–Tecquipment(TQ) ,Bench Mounted Machine (ii)</p> <p>Laptop Computer Corei7,500GB,Ram2GB, Graphic 2GM Miniun Requirement</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
75	<p>STROBOSCOPE</p> <p>Tecquipment(TQ)</p> <p>SPECIFICATIONS</p> <p>NETT DIMENSIONS: 5.71cm x 6.09cm x 19.05cm and 0.24 kg</p> <p>FLASH RATE: 30 TO 300,000 flashes per minute continuous range</p> <p>FREQUENCY SETTING: FPM OR Hz,ACCURACY: 0.02 %</p> <p>TRIGGER SOURCES: internal, external high level (3V to 32V) and external low level (< 1V)</p>
76	<p>Natural Convection and Radiation Apparatus Heating element,</p> <ul style="list-style-type: none"> • output: 20W, radiation surface area: approx. 61cm² <p>Pressure vessel, pressure: 1-1.5bar, volume: 11 L</p> <p>Pump for vacuum generation, power consumption: 250W</p> <ul style="list-style-type: none"> • Nominal suction capacity: 5m³/h, • final pressure with gas ballast: 3*10⁻³ mbar, • final pressure without gas ballast: 3*10⁻³ mbar • Measuring ranges, negative pressure: 0.5*10⁻³ – 1000mbar <p>pressure: -1-1.5bar rel., temperature: 0-250°C, power: 0-23W</p> <p>230V, 50Hz, 1 phase, 230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase</p> <p>UL/CSA optional</p> <ul style="list-style-type: none"> • L x W x H: 1340x790x1500mm, Weight: approx. 160kg
	<ul style="list-style-type: none"> • Scope of Supply : (1) trainer, (1) software + USB cable, (1 set) of instructional material <p>Required for Operation: • compressed air: min. 1.5bar</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
77	<p>Temperature Measurement & Calibration Recommended Instruments</p> <ul style="list-style-type: none"> - Barometer : to determine absolute pressure - Stop clock: when not using the optional interface device/educational software -DC calibrator/thermocouple simulator:to demonstrate calibration of instrumentation -Resistance box/PRT simulator:to demonstrate calibration of instrumentation/lead errors <p>Electrical supply: Single phase -Supply 220-240V /1ph /50Hz,10A Packed and created shipping specification</p>
78	<p>Heat Exchanger Service Unit (Width earth/groud), Line Current up to 13A at 230V 220-240 Volts, Single Phase, 50 Hz Heat Transfer Area: 24000mm²</p> <ul style="list-style-type: none"> • 11 x Essential Heat Exchangers available • 12 Temperature inputs • Hot water flow rate: 4...50 gm/s • Cold water flow rate: 4...50gm/s • Digital Temperature Indicator: 0.1°C resolution <p>Water Heater: 3kW immersion heater</p> <ul style="list-style-type: none"> • Water heater protection: 80°C maximum thermostat

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
79	<p>Linear Heat Conduction Module</p> <ul style="list-style-type: none"> • Heated Section. Material: Brass, Ø25mm. Cooled Section. Material: Brass, Ø25mm. • Brass Intermediate Specimen: Ø25mm x 30mm long. • Stainless Steel Intermediate Specimen: Ø25mm x 30mm long. • Aluminium Intermediate Specimen: Ø25mm x 30mm long. • Reduced Diameter Brass Intermediate Specimen: Ø13mm x 30mm long.
80	<p>Radial Heat Conduction Module</p> <ul style="list-style-type: none"> • Heated Disc. Material: Brass, Ø110mm. • Brass Core: Ø14mm. • Disc Thickness: 3.2mm. • Radial interval of Thermocouples: 10mm
81	<p>Laws of Radiant Heat Transfer/ Heat Exchanger Module</p> <ul style="list-style-type: none"> • Heat source: 200W ceramic heater; Ø100mm black plate (Near 1.0 emissivity) • At maximum voltage plate can reach upwards of 300°C • Light source: 40W bulb, glass diffuser. 180° rotation
82	<p>Extended Surface Heat Transfer</p> <ul style="list-style-type: none"> • Cylindrical Bar: Brass, Ø10mm x 350mm (L) • 8 x Thermocouples: 50mm intervals

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
83	<p>Unsteady State Heat Transfer Module</p> <ul style="list-style-type: none"> • Bath capacity approx.: 30 litres • Heating element: 3kW (at 240Vac) • Brass Cylinder: Ø20mm x 100mm (L) • Stainless Steel Cylinder: Ø20mm x 100mm (L) Brass Cylinder: Ø30mm x 100mm (L) • Brass slab: 70 (L) x 15(W) x 76(H) mm • Stainless Steel: 70 (L) x 15(W) x 76(H) mm Brass Sphere: Ø45mm • Stainless Sphere: Ø45mm
84	<p>Sheel and Tube Heat Exchanger</p> <p>Heat Transfer Area: 24000 mm², Tube Bundle Length: 205 mm, 4 thermocouples</p> <ul style="list-style-type: none"> • Tube Material: Stainless steel • Tube outside Diameter: Ø4.76mm • Tube Wall Thickness: 0.6mm • Number of tubes in bundle: 7 • Effective length of tube bundle: 205mm Effective heat transfer area: 18700mm² • Shell Material: Clear Borosilicate (Pyrex type glass) • Shell Inside Diameter: Ø75mm Shell Wall Thickness: 10mm <p>Number of baffles: 2</p>
85	<p>Engineering Science Full Set</p> <p>-ESF</p> <p>-TECQUIPMENT</p> <p>-UK</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
86	<p><u>Thermodynamics</u></p> <p>Expansion of a Perfect Gas</p> <p>-TD 1004</p> <p>-TECQUIPMENT</p> <p>-UK</p>
87	<p>VDAS mkII (BENCH MOUNTED VERSION)</p> <p>-VDAS-B to allow computer-based data capture for a wide range of TecQuipment products.</p> <p>-TECQUIPMENT</p> <p>-UK</p>
88	<p>Ideal Gases-Boyle's Law</p> <p>-TD 1000</p> <p>-TECQUIPMENT</p> <p>-UK</p>
89	<p>Ideal Gases-Gay-Lussac's Law</p> <p>-TD 1001</p> <p>-TECQUIPMENT</p> <p>-UK</p>
90	<p><u>STRENGTH LAB</u></p> <p>Hook's Law And Spring Gate</p> <p>-SM 110</p> <p>-TECQUIPMENT</p> <p>-UK</p>
91	<p>Bench-Top Tensile Testing Machine</p> <p>-SM 1002</p> <p>-TECQUIPMENT</p> <p>-UK</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
92	<p>Tensile Test Specimens</p> <p>-TL AND TS</p> <p>-TECQUIPMENT</p> <p>-UK</p>
93	<p>VDAS mkII (BENCH MOUNTED VERSION)</p> <p>-VDAS-B to allow computer-based data capture for a wide range of TecQuipment products.</p> <p>-TECQUIPMENT</p> <p>-UK</p>
94	<p>Extensometer</p> <p>-Extensometer for SM1002</p> <p>-TECQUIPMENT</p>
95	<p><u>ICE LAB</u></p> <p>Small Engine Test Set</p> <p>-TD 200</p> <p>-TECQUIPMENT</p>
96	<p>Four-stroke Petrol Engine</p> <p>-TD 201</p> <p>-TECQUIPMENT</p>
97	<p>Manual Volumetric Fuel Guage</p> <p>-AVF 1</p> <p>-TECQUIPMENT</p>
98	<p>VDAS mkII (FRAME MOUNTED VERSION)</p> <p>-VDAS mkII to allow computer-based data capture for a wide range of TecQuipment products.</p> <p>-TECQUIPMENT</p> <p>-UK</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
99	<p><u>FLUID LAB</u></p> <p>Hydrostatics and Properties of Fluid</p> <p>-H314</p> <p>-TECQUIPMENT</p> <p>-UK</p>
100	<p>Metacentric Height and Stability</p> <p>-H2 MK11</p> <p>-TECQUIPMENT</p>
101	<p>Digital Hydraulic Bench</p> <p>-H1F</p> <p>-TECQUIPMENT</p>
102	<p>Flow Measurement Methods</p> <p>-H10</p> <p>-TECQUIPMENT</p>
103	<p>Friction Loss in pipe</p> <p>-H7</p> <p>-TECQUIPMENT</p>
104	<p>Centre of Pressure</p> <p>-H11</p> <p>-TECQUIPMENT</p>
105	<p>Optical Techometer</p> <p>-OT1</p> <p>-TECQUIPMENT</p>
106	<p>Pressure measurement Bench</p> <p>-H30</p> <p>-TECQUIPMENT</p>

6.Mechanical Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
107	Flow Meter Calibration -H40 -TECQUIPMENT
108	Pitot Tube -H40A -TECQUIPMENT
109	Venturi Flow Meter -H40B -TECQUIPMENT
110	Flow Through on Orifice -H4 -TECQUIPMENT -UKH 4
111	Orifice Flow Meter -H40C -TECQUIPMENT
112	Refrigeration Cycle EC 1500
113	Air Conditioning Trainer EC 1501