

HALDIA INSTITUTE OF TECHNOLOGY
(A unit of ICARE)
An Autonomous Institution

Sealed quotations are invited from the resourceful vendors for the following equipment for AICTE IDEA Lab. Vendors are advised to strictly adhere the specification. Last date for submission of quotation is 19/01/2022.

Details of the machines of AICTE IDEA Lab

Sl. No	Item	Particulars
1.	Single PCB CNC Drilling & router	Work Table board(mm): 400 x400mm x80mm Spindle PowerMotor: 1 Spindle Rotating Speed of Spindle: 0–24000rpmW. Drive: Stepper Driver & motor Working Mode: Stepper Motor Drive Mechanism: Imported Ball screw. MaxMotionSpeed:10,000mm/min. Max Working Speed:8000mm/min EngravingTools:Dia3.175mm,Dia6.00mm WorkingVoltage:AC2200V, 50Hz/60Hz.
2.	3D Printing machine	Dimensions: 85x77x199cm Cylindric Print Area: Ø 400 mm – 670mm h Layer resolution: 100 micron Nozzle diameter: 0.4 mm (0.7 mm, 1.2 mm) Filaments used: 1.75 mm (PLA, ABS, HIPS,PETG) Maximum speed: 200 mm /s Travel speed: 200 mm/s Input: 220/240V50/60 Hz Power Consumption: 60W Print + 550W hot pad

3.	3D Scanning machine	Sr.No.	Details	Specifications
		1.	Technology	3D scanner with point cloud data.
		2.	Scan Mode	Scanner Should have Handheld HD Scan & Fixed Mode & Rapid Mode, Auto Mode to scan different engineering objects or components.
		3.	Scan Accuracy	Should have a maximum accuracy Up to 0.045mm
		4.	Volume Accuracy	Should be min 0.3mm/m with specific Alignment System.
		5.	Scan Speed	10 fps 30 fps 30,00,000 points/sec 15,00,000 points/sec
		6.	Point Distance	Should be in between 0.2mm-2mm
		7.	Single scan range	Min 150*120mm - max 250*200mm
		8.	DOF	±100 mm
		9.	Working Center Distance	Scanner should work with a working centre distance of max 350mm
		10.	Light Source	LED
		11.	Align Mode	Marker Alignment, Feature Alignment, Turntable coded Target
		12.	Texture Scan	Yes With Add on: Colour Pack.
13.	Outdoor Operation	Set up the shelter or cover to avoid direct sunlight		

4	CNC Router	Working area: 1300X2500X300 mm Job material: Acrylic & Wood, Spindle power: 3.5kw air cool spindle Working voltage: AC220V/50HZ Controller: Siemens make
5	CNC CO₂ Laser Engraving Machine	Equipment size: 1460x800x1080mm Laser power: 30-180W Cutting speed: 60,000mm/min Power supply: 220V/150Hz.
6	Embedded System Laboratory	<u>Digital Storage Oscilloscope</u> Band width : 70 MHz to 300 MHz Sample Rate : 2 G samples/s Memory Depth : upto 20 M sample ADC resolution :10 bit Display : 10.1” capacitive touch screen Vertical Scale : 1mv/div to 5 V/div with 10 vertical divisions Time base accuracy : +/- 2.5 ppm Built in applications : Digital voltmeter , Mask Test , Frequency Counter , Arbitrary Waveform Generator Logic Analyzer Input : 16 digital channels Logic Analyzer Bandwidth : 200 MHz or better
7	Embedded System	(a)Digital Storage Oscilloscope (conventional)-02 nos , (b)Digital Multimeter :10 nos,

	Laboratory	(c)Function Generator :05 nos , (d)Frequency Counter :03 nos , (e)Temperature Controlled Soldering iron -05 nos , (g)Temperature Controlled De-soldering Pump : 05 nos, (h) Conventional De-soldering Pump :05 nos, (i) AnaDG Kit : 05 nos , (j)Bread Board : 10 nos , (k)DC Regulated Power Supply (0 to 20 v , +/- 15 v , + 5v) : 05 nos ,
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8	PCB Milling Machine	Recommended For	Drilling, Routing
		Not Recommended For	ALUMINIUM ROUTING
		Machine Structure	Bed - MS fabrication ; X , Y Base & Column -
		Machine Weight	200 Kg
		Total Working Area	300 mm x 300 mm
		Enclosure	Included
		X , Y & Z Drive	Single Phase
		Clamping System	Pinning
		Electrical Drive	Stepper Motors
		Mechanical Drive	Premium Quality Rolled Ball screws (PMI / HIWIN)
		Pitch	16/5
		Accuracy	30 micron
		Spindle	1.2 kW, 40000 RPM MTC
		Tool Change	Manual Tool Change
		Cooling Type	Water cooled
		Shank Diameter (tool)	3.175 mm (1/8)
		Min. Drill Diameter	0.6 mm
		Machine Speed (Hits / Min)	110
		X & Y Axis Speed	10 Meter/Minute
		Z Axis Speed	10 Meter/Minute
		Dust Collection	Run Time
		Pressure Pad Type	Not Included (Optional)
		VFD	Delta
		Control System	PC based
		Software	PCB CAM (Gerber to G Code Convertor)
		File Format	Geber
		Power Phase	Single
		Power Consumption	3.5 kw
		Input Power Supply	6A ; 230 Voltage

9	PC	<p>Workstations : 05 nos with networking</p> <p>Processor 10th Generation Intel® Core™ i5-10500 (6-Core, 12MB Cache, 3.1GHz to 4.5GHz, 65W)</p> <p>Operating System Windows 10 Pro (64-bit) English</p> <p>Video Card Intel® Integrated Graphics</p> <p>Memory 8GB ,1x8GB, DDR4 non ECC memory</p> <p>Hard Drive 3.5" 1TB 7200RPM SATA Hard Disk Drive Or SSD</p>
10	IoT Kit – A Platform to Experiment Internet of Things	<ol style="list-style-type: none"> 1. Quad-core ARM Cortex-A53 (Armv8-A architecture) 2. Up to 1.2GHz Clock speed 3. Broadcom Video Core IV 4. 1GB LPDDR2 (900 MHz) 5. MicroSDHC slot for on-board storage

		<p><i>Communication Interfaces</i></p> <ul style="list-style-type: none"> ▪ 10/100 Ethernet ▪ 2.4GHz 802.11n wireless ▪ Bluetooth 4.1 Classic ▪ Bluetooth Low Energy <p><i>On board Sensors</i></p> <ul style="list-style-type: none"> ▪ ADXL345 - Tripple Axis Accelerometer Sensor (SMD Type) ▪ SHT31 – Temperature & Humidity Sensor (SMD Type) <p><i>Onboard User interfaces</i></p> <ul style="list-style-type: none"> ▪ 3x3 channel relay ▪ 3 RGB LED ▪ 2 Push button ▪ Buzzer ▪ OLED display <p><i>Ports for External Interface:</i></p> <ul style="list-style-type: none"> ▪ UART ▪ SPI ▪ I2C ▪ 8 Analog I/O ▪ 31 GPIOs to interface external sensors ▪ 4 USB 2.0 port ▪ 3.5mm analog audio-video jack ▪ 5x5V Power supply ▪ 3x3.3V Power supply ▪ HDMI output ▪ Camera Serial Interface (CSI) ▪ Display Serial Interface (DSI) <p><i>Additional External Sensors & Accessories (Included):</i></p> <ul style="list-style-type: none"> ▪ Breadboard ▪ M-M Jumper Wires – 40 No's ▪ M-F Jumper Wires – 40 No's ▪ F-F Jumper Wires – 40 No's ▪ Power Adaptor with USB Cable ▪ HDMI to VGA Converter ▪ IR Sensor ▪ PIR Sensor ▪ Magnetic Door Sensor ▪ DHT11 Sensor ▪ Ultrasonic Sensor ▪ LM35 Module ▪ LuX Sensor - BH1750 ▪ Soil Moisture Sensor ▪ Rain Sensor ▪ GAS Sensor (MQ2) ▪ Air Quality Sensor (MQ135) ▪ Servomotor
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