

Annexure -1

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TENDER FORM

P1 (ELECTRONICS DEVELOPMENT, ROBOTICS, INTERNET OF THINGS AND SENSORS)						
Mention your quotation for one lab						
Category	Name	Description	Brand/co	Amount	GST	Total Amount
Electronics Development	Arduino UNO or compatible Microprocessor and microcontroller	Hardware development board with Memory and IO ports				
Electronics Development	Arduino Nano					
Electronics Development	RASPBERRY PI 3	RASPBERRY PI 3 MODEL B				
Electronics Development	Breadboards & Mini Breadboard	Solderless 400 pin breadboard				
		Solderless 800 pin breadboard				
		Self Adhesive Proto Shield				
Electronics Development	General Purpose solderable Board	FR2 A Grade Material (140 x 90 mm)				
		FR2 A Grade Material (80 x 55 mm)				
		Female Berg Strip 40 pins				
		Male Berg Strip 40 pins				
Electronics Development	16x2 LCD display With I2C	Dot matrix LDC display with 16 characters x 2 lines				
Electronics Development	USB Cables	USB Cable Set (A to B)				
Electronics Development	9 Volt battery, multiple resistors and capacitors for electronic projects (various sizes)	Amperage, Range of Restistance, Capacity of Capacitator				
Electronics Development	Linear Voltage Regulator	7805, 7812,7809				
Electronics Development	Water Pump module	DC12V 3W Submersible Water Pump				
Electronics Development	Piezoelectric Plate	Normal Copper based 4 cm Diameter approx				
Electronics Development	8*8 LED Matrix Module	Max7219 Dot LED Matrix Module Mcu Control LED Display Module				
Electronics Development	Bluetooth	HC 05 Working voltage 5 Volt				
Electronics Development	7 Segment Led Display	LED 4-Digit Display Module w/ Clock Point / 4-Pin Dupont Line for Arduino (20cm)				
Electronics Development	GSM	Sim800L Gprs Transfer Board Micro Sim Gsm Core Ttl Port Module for Arduino				
Electronics Development	GPS	GY-NEO6MV2 new GPS module				
Electronics Development	Laser Diode	650Nm 6Mm 5V Dc 5Mw Mini Laser Dot Diode Module				
Electronics Development	LDR Module	Photosensitive Ldr Light Sensor Module				
Electronics Development	Keypad	Universal 16 Key Switch Keypad				
Electronics Development	Joy Stick	Joystick Module for Arduino				
Electronics Development	Active Buzzer	small 5 volt big 5 volt				
Electronics Development	Motor driver	L293d				
Electronics Development	Sound Playback Module	Voice Board Recording Recorder Playback Module on Board Microphone with Mic Sound Audio Loudspeaker				
Electronics Development	BO Motors With Wheel	Side Shaft BO Motor				
Electronics Development	Node MCU / Wemos D1	WIFI Internet Development Board Module Node MCU				

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Electronics Development	Vibrating Motor	Vibrating Motor				
Electronics Development	Alligator Connectors	Multi Colour Alligator Connectors				
Electronics Development	Battery clips with DC Jack	9 volt battery clips with DC Jack				
Electronics Development	Hookup Wires	Red & Black set 100 Meters each				
Electronics Development	Jumper Cable	Male-Male				
		Male-Female				
		Female-Female				
Electronics Development	RGB LEDs	Regular 5mm 3-5 volt Range				
Electronics Development	LEDs (Red)	Regular 5mm 3-5 volt Range				
Electronics Development	LEDs (Green)	Regular 5mm 3-5 volt Range				
Electronics Development	LEDs (Blue)	Regular 5mm 3-5 volt Range				
Electronics Development	Diode	Different Basic Diodes kit				
Electronics Development	Push Button Switch	Tactile Switch Micro - Push to On Button				
Electronics Development	555 timer ic	555 timer ic				
Electronics Development	Atmega16u2	Individual IC (DIP)				
Electronics Development	MPR121	Capacitave touch module				
Electronics Development	Capacitave Touch Switch	Capacitave Touch Switch				
Internet of Things & Sensors	IR Sensors, Obstacle avoider sensor	Detection range, detection angle				
Internet of Things & Sensors	Triple Axis Magnetometer	3-Axis Magnetoresistive Sensors				
		I2C Digital Interface				
		Integrated 12-bit ADC				
		Range of -8 to +8 Gauss				
		160 Hz Maximum Output Rate				
Internet of Things & Sensors	Humidity Sensor	Operating range: 20 - 95 % RH				
		Temperature: 0 - 60 Celsius				
		Power supply: 1.5V AC(Max sine)				
		Operating frequency: 500Hz - 2kHz				
Internet of Things & Sensors	MQ Series	MQ-4 Methane Natural Gas Sensor				
		MQ-3 Alcohol - Ethanol Sensor				
		MQ-7 High Sensitivity CO Carbon Monoxide Sensor Detector				
		MQ - 2 Smoke Detection				
		MQ-135 Air Quality Sensor				
Internet of Things & Sensors	IR (transmitter) receiver -TSOP 1738	Switching rate – 38 KHz				
Internet of Things & Sensors	Ultrasonic Sensor Module HC-SR-04 or compatible	Power supply				
		Quiescent current				
		Working current				
		Effectual angle				
		Ranging distance				
		Resolution				
		Working angle & dimension				
Internet of Things & Sensors	Triple Axis accelerometer-	3-axis sensing				
		Small, low profile package				
		4 mm × 4 mm × 1.45 mm LFCSP				
		Low Power : 350 µA (typical)				
		Single-supply operation: 1.8 V to 3.6 V				
Internet of Things & Sensors	PIR Motion Detector Module	High digital pulse when motion detected				
		Low digital pulse when idle /no motion detected				
		Sensitivity range (upto 6 m)				
		Power supply: 5V – 12V				
Internet of Things & Sensors	Pulse Rate Heart Sensor	Pulse Rate Sensor Finger Basedwore on the finger or earlobe Working voltage 3-5V				
Internet of Things & Sensors	Relay Module	5V 10A 2 Channel Relay Module				

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Internet of Things & Sensors	Soil Moisture Sensor	Soil Moisture Detection Humidity Sensor Module				
Internet of Things & Sensors	Touch Sensor	Capacitive Touch Sensor Module				
Internet of Things & Sensors	Metal touch sensor module					
Internet of Things & Sensors	Rain Drop Sensor	Rain Sensitive , Rain Drop Detection Sensor Module				
Internet of Things & Sensors	Flex Sensor	Flex Sensor 2.2 Inches				
Internet of Things & Sensors	Temperature Sensor	Temperature Sensor Lm35				
Internet of Things & Sensors	Force Pressure Sensor	force sensitive resistor with a square, 1.75x1.5", sensing area				
Internet of Things & Sensors	Color Recognition Sensor	TCS3200 Color Recognition Sensor				
Internet of Things & Sensors	Water Flow Sensor	Arduino Compatible				
Internet of Things & Sensors	Sound Sensor	Sound Sensor Module, Microphones module				
Internet of Things & Sensors	IR Sensors Array for Line Follwing	IR Sensors Array for Line Follwing				
Internet of Things & Sensors	10000 Mh 5 volt Power Bank	10000 Mh 5 volt Power Bank				
Internet of Things & Sensors	RFID Reader – Tags	Current :13-26mA / DC 3.3V				
		Idle Current :10-13mA / DC 3.3V				
		Sleep Current<80uA				
		Peak Current<30mA				
		Operating Frequency: 13.56MHz<30mA				
Internet of Things & Sensors	RF Modules Tx & Rx 315 MHz ASK	Read range between 20 cm to 1 m				
		Frequency Range: 433.92/315 MHz				
		Supply Voltage: 3 – 6 V				
		Output Power : 4 – 16 Dbm				
		Low power consumption				
Robotics	Stepper motor with Driver board	28BYJ-48 ULN2003 5V Stepper Motor + ULN2003 Driver Board				
Robotics	DC motor	12V DC Gear 150 RPM				
Robotics	Servo motors	Position Servo Angle based Metal Gear				
		Small Servo Metal Gear				
		Continuous Metal Gear Servo 360				
Robotics	150 RPM BO Motor	150 RPM BO Motor				
Robotics	L298P Motor Driver	L298P Motor Driver Shield or relative Driver Shield				
Robotics	Servo Motor Testor	CCPM 3 channel Servo Tester				
DIY Kit	Robotics DIY Kit	4 wheel robotic kit				
DIY Kit	Mechanical (Modular) Construction kit	Should be compatible with electronics				
DIY Kit	STEM learning/application Kit	Drone Kit				
		Aerospace Kit				
		Automobile Kit				
		Bio-medical Kit				
		Agritech Kit				
		Bio-tech Kit				
		Water/Sanitation Kit				
Other potential STEM application Kit						
P 1 TOTAL AMOUNT						

P2(Rapid Prototyping Tools)

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Rapid Prototyping Tools	3D Printer Kit and tools	MANDATORY REQUIREMENTS: Printer Type : FDM (Fused Deposition Modeling) Minimum Dimensions: 160mm*160mm*160mm Build Size or 4 litre build volume. Nozzel : 0.3mm to 0.4mm nozzle diameter Slicing Softwares should be Free or Open Source LCD Screen UI that displays print metrics Good quality anti-bacterial fungal cover				
Rapid Prototyping Tools	Dedicated UPS/Power back up with a 2 hour battery back up at least					
Rapid Prototyping Tools	Filament for 3D printer	Compitable 700/1000 Grams Filament				
Rapid Prototyping Tools	Filament Storage Box					
Rapid Prototyping Tools		Cardboard				
		foam core boards				
		string				
		rubberband				
		popsicle sticks				
		wood glue				
P 2 TOTAL AMOUNT						

P3 (MECHANICAL, ELECTRICAL AND MEASUREMENT TOOLS)

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Mechanical Tools	Hacksaw	150mm Junior Hacksaw				
Mechanical Tools	Extra hacksaw blades					
Mechanical Tools	Pliers	External Straight				
		Nose Circlip Plier				
		Long Nose Plier				
		Combination Mini Plier				
		Wire stripping pliers				
		Bent nose plier				
Mechanical Tools	Mini Hack Saw	Mini 254mm Hacksaw				
Mechanical Tools	Hacksaw blades Mini					
Mechanical Tools	Ball Pein Hammer	Ball Pein Hammer				
Mechanical Tools	Steel Shaft Claw Hammer	Claw Hammer Steel Shaft				
Mechanical Tools	C-Clamp	Metal Clamp 3 " Inch szie				
Mechanical Tools	Allen Key Set	10 Piece Ring Imperial Allen Hex key				
Mechanical Tools	Workstation for drilling					
Mechanical Tools	Spanner Set	12 piece combination Spanner Set				
Mechanical Tools	Ratcheting Screwdriver Set	30 Piece Ratcheting Screwdriver Set				
Mechanical Tools	Vice Normal	Table top vice fitted to the table				
Mechanical Tools	Screw Driver Set	6 Piece Precision Screw Driver Set				
Mechanical Tools	Adjustable Universal Multi Wrench Spanner					
Mechanical Tools	Wire Strippers	Wire Stripper Cutter Plier With Spring - 26x6x20 Cms (LxWxH)				
Mechanical Tools	Screwdriver	Multi-purpose				
Mechanical Tools	Tool Set	Multi-purpose				
Mechanical Tools	Cordless Drill	Cordless Drill with 2 Battery Pack				
Mechanical Tools	Rubber Air Pump Cleaner Dust Blower	Rubber Air Pump Cleaner Dust Blower				
Mechanical Tools	Drill Bit Set	High Quality 13 Pcs HSS Drill Bits Set For for Wood, Iron, Aluminium, Plastic etc				
Mechanical Tools	File set	6 Inches				
Mechanical Tools	Flexible Cutting Mat	A/3 Size With Marked Pattern And Grids (18" X 12")				
Mechanical Tools	Plastic Tool Box with Organizer	For Keeping tools				
Mechanical Tools	PegBoard	Peg board System to mount tools on wall.				
Electric Tools	Hot glue gun	Range in open space (Standard Conditions)				
Electric Tools	Soldering Kit	Variable Wattage of Soldering Iron: 15-30 watts/230 volts				
		Soldering Iron Temperature Range: 280°C to 450°C				
		De-Soldering Pump, Soldering Flux (Paste) ,DE-soldering Copper Braid (Solder Wick)				
		Soldering Wire: 20/22 AWG soldering Wire with rosin core flux (100 Grams)				
Electric Tools	Adapters	DC power Adapter with 5V, 12V				
Electric Tools	Electric Screw Driver Set					
Electric Tools	Dual Temperature Heat Gun	1800 W Dual Temperature Heat Gun				
Electric Tools	Soldering Helping hand					
Measurement Tools	Return measuring tape	Return measuring tape 5Mx19mm				
Measurement Tools	Stainless Steel Rule	Stainless Steel 12" / 150 mm Rule				
Measurement Tools	Digital Vernier Caliper	150 mm / 6" Digital Vernier Caliper				
Measurement Tools	Spirit Level	12" Spirit Level				
Measurement Tools	Digital Pen electric Tester	Voltage tester				

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Measurement Tools	Digital Multi Meter	· Digital Multi Meter Voltage Current Resistance-7 functions + 19 ranges to cover DC voltage 200mV to 1kV,				
		· AC voltage 200 V - 750 V,				
		· DC current 200 μ A - 10 A				
P 3 TOTAL AMOUNT						

P4 (POWER SUPPLY AND ACCESSORIES AND SAFETY EQUIPMENTS)

Category	Name	Description	Brand/co	Amount	GST	Total Amount
Power Supply & accessories	Glue Sticks	11 mm x 200mm Hot Melt Glue Stick				
Power Supply & accessories	Nuts and Bolts and screw	Various Size 20 each				
Power Supply & accessories	Cable Tie	Small , Medium, Big in pack of 100 each				
Power Supply & accessories	Sand Paper	Various Grit-80 4pcs 100 4pcs 120 4pcs				
Power Supply & accessories	Power Strip Adaptors	5 Plug with Safety Fuse Standard Quality Extension, 3m wire				
Power Supply & accessories	Bulb Holders	Regular Hanging Bulb holder				
Power Supply & accessories	Electric Wires	Twisted Red black pair				
Power Supply & accessories	USB TO dc jack cable	USB to DC jack cable for Battery bank				
Safety equipment	Standard first aid kit					
Safety equipment	Fire extinguisher (handy units)	Powder Type Fire Extinguisher 2KG				
Safety equipment	Safety goggles (with/ without LED torch)	Safety Goggles for Chemical Splash and Smoke from Soldering				
Safety equipment	Safety Gloves Pairs	Latex Coating Gloves (Medium Size)				
Safety equipment	Safety Mask	Filtering efficiency ranging 80 percent when tested against 0.3-micron sodium chloride particle				
P 4 TOTAL AMOUNT						

GRAND TOTAL(P1+P2+P3+P4)