Item of procured in Year-1st

Sr. No.	Name of item with specification	Syllabus Sr. No.	Trade/Course for which it is required	Total Required	Rate/Unit on INR Lakh	Amount	Total (In INR Lakh)	Method of Procurement (e.g. Shopping/Competitive Bidding)
1	Connecting screwdriver 1.0 X 1.0 0 mm	1	IoT Technician (Smart Agriculture)	12 Nos	150	1800	0.018	Competitive Bidding
2	Neon tester 500 V	2	IoT Technician (Smart Agriculture)	08 Nos	120	960	0.0096	Competitive Bidding
3	Screwdriver set Set of 7	3	IoT Technician (Smart Agriculture)	12 Nos	1500	18000	0.18	Competitive Bidding
4	Insulated combination pliers 150 mm	4	IoT Technician (Smart Agriculture)	08 Nos	350	2800	0.028	Competitive Bidding
5	Insulated side cutting pliers 150mm	5	IoT Technician (Smart Agriculture)	08 Nos	800	6400	0.064	Competitive Bidding
6	Long nose pliers 150mm	6	IoT Technician (Smart Agriculture)	08 Nos	300	2400	0.024	Competitive Bidding
7	Soldering iron 25 Watt, 240 Volt	7	IoT Technician (Smart Agriculture)	12 Nos	550	6600	0.066	Competitive Bidding
8	Electrician knife 1 0 0 mm	8	IoT Technician (Smart Agriculture)	08 Nos	110	880	0.0088	Competitive Bidding
9	Tweezers 150 mm	9	IoT Technician (Smart Agriculture)	12 Nos	200	2400	0.024	Competitive Bidding
10	Digital Multimeter (3 3/4 digit) 4000 Counts	10	IoT Technician (Smart Agriculture)	12 Nos	4500	54000	0.54	Competitive Bidding
11	Soldering iron Changeable bits 15 Watt, 240 Volt	11	IoT Technician (Smart Agriculture)	08 Nos	500	4000	0.04	Competitive Bidding
12	De- soldering pump electrical heated, manual operators 230 V, 40 W	12	IoT Technician (Smart Agriculture)	12 Nos	450	5400	0.054	Competitive Bidding
13	Steel rule graduated both in Metric and English Unit 300 mm	13	IoT Technician (Smart Agriculture)	04 Nos	120	4800	0.048	Competitive Bidding
14	Precision set of screw drivers T5, T6, T7	14	IoT Technician (Smart Agriculture)	02 Nos	5000	10000	0.1	Competitive Bidding
15	Tweezers – Bend tip	15	IoT Technician (Smart Agriculture)	02 Nos.	200	400	0.004	Competitive Bidding
16	Steel measuring tape 3 meters	16	IoT Technician (Smart Agriculture)	04 Nos	120	480	0.0048	Competitive Bidding
17	Tools makers vice 100mm (clamp)	17	IoT Technician (Smart Agriculture)	01 No.	3500	3500	0.035	Competitive Bidding
18	Tools maker vice 50mm (clamp)	18	IoT Technician (Smart Agriculture)	01 No.	8000	8000	0.08	Competitive Bidding
19	Crimping tool (pliers) 7 in 1	19	IoT Technician (Smart Agriculture)	02 Nos	750	1500	0.015	Competitive Bidding
20	Magneto spanner set 8 Spanners	20	IoT Technician (Smart Agriculture)	02 Nos	1000	2000	0.02	Competitive Bidding
21	File flat bastard 200 mm	21	IoT Technician (Smart Agriculture)	02 Nos	300	600	0.006	Competitive Bidding
22	File flat second cut 200 mm	22	IoT Technician (Smart Agriculture)	02 Nos.	800	1600	0.016	Competitive Bidding
23	File flat smooth 200 mm	23	IoT Technician (Smart Agriculture)	02 Nos.	300	600	0.006	Competitive Bidding

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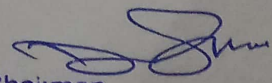Bagsaid, Distt. Mandi (H.P.)

24	Plier - Flat Nose 150 mm	24	IoT Technician (Smart Agriculture)	04 Nos.	300	1200	0.012	Competitive Bidding
25	Round Nose pliers 100 mm	25	IoT Technician (Smart Agriculture)	04 Nos.	250	1000	0.01	Competitive Bidding
26	Scriber straight 150 mm	26	IoT Technician (Smart Agriculture)	02 Nos.	100	200	0.002	Competitive Bidding
27	Hammer ball pen 500 grams	27	IoT Technician (Smart Agriculture)	01 No.	350	350	0.0035	Competitive Bidding
28	Allen key set (Hexagonal set of 9) 1 - 12 mm, set of 24 Keys	28	IoT Technician (Smart Agriculture)	01 No.	500	500	0.005	Competitive Bidding
29	Tubular box spanner Set - 6 - 32 mm	29	IoT Technician (Smart Agriculture)	01 Set	2500	2500	0.025	Competitive Bidding
30	Magnifying lenses 75 mm	30	IoT Technician (Smart Agriculture)	02 Nos.	300	600	0.006	Competitive Bidding
31	Continuity tester With 4 ½ Digit Display and 20k Count	31	IoT Technician (Smart Agriculture)	06 Nos.	1500	9000	0.09	Competitive Bidding
32	Hacksaw frame adjustable 300 mm	32	IoT Technician (Smart Agriculture)	02 Nos.	300	600	0.006	Competitive Bidding
33	Chisel - Cold - Flat 10 mm X 150 mm	33	IoT Technician (Smart Agriculture)	01 No.	150	150	0.0015	Competitive Bidding
34	Scissors 200mm	34	IoT Technician (Smart Agriculture)	01 No.	500	500	0.005	Competitive Bidding
35	Handsaw 450mm	35	IoT Technician (Smart Agriculture)	01 No.	500	500	0.005	Competitive Bidding
36	Hand Drill Machine Electric with Hammer Action 13 mm	36	IoT Technician (Smart Agriculture)	02 Nos.	1500	3000	0.03	Competitive Bidding
37	First aid kit	37	IoT Technician (Smart Agriculture)	01 No.	2500	2500	0.025	Competitive Bidding
38	Bench Vice, Bench Vice - 125 mm, Bench Vice - 100 mm, Bench Vice - 50 mm	38	IoT Technician (Smart Agriculture)	01 No. Each	10000	30000	0.3	Competitive Bidding
39	Multiple Output DC regulated power supply 0-30V, 2 Amps, + 15V Dual Tracking 5V/5A, Display digital, Load & Line Regulation: ± (0.05 %+100 mV), Ripple & Noise: 1 mV rms. Constant Voltage & Current operation	39	IoT Technician (Smart Agriculture)	04 Nos.	12000	48000	0.48	Competitive Bidding
40	DC Regulated Variable Programmable DC Power Supply 0-30V/3A with numeric keypad, PC interface and LCD for Voltage, Current & Power	40	IoT Technician (Smart Agriculture)	02 Nos.	16000	32000	0.32	Competitive Bidding
41	LCR meter (Digital) Handheld It can Measure six basic parameters R,C,L equipped with SMD Component Test Fixture	41	IoT Technician (Smart Agriculture)	01 No.	30000	30000	0.3	Competitive Bidding
42	70 MHz Mixed Signal Oscilloscope (4 Analog + 16 Digital Channel) With more than 20Mpt memory Real time Sampling 1GSa/sec , having LAN Interface with, I2C , SPI, Runt etc . And RS232/UART, I2C and SPI trigger decoding functions, two channel 25MHz awg plus math functions like differentiation, integration, abs, AND,OR,NOT etc	42	IoT Technician (Smart Agriculture)	01 No.	35000	35000	0.35	Competitive Bidding

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43	25 MHz Arbitrary Waveform Generator with Digital Display for Frequency and Amplitude, Two Channel, 200MSa/Sec and 2Mpt memory with more than 150 different arbitrary waveforms and built-in 8th order harmonic generation and 150MHz Frequency counter PC Connectivity USB Device/Host and LAN	43	IoT Technician (Smart Agriculture)	01 No.	20000	20000 ✓	0.2	Competitive Bidding
44	6 1/2 Digit Digital Multimeter, Measurement Functions: DC &AC Voltage, DC&AC Current, 2-wire & 4-wire Resistance, CAP, Diode, Connectivity, Frequency, Period, Any Sensor. Temperature: RTD, THERM,TC (B/E/J/K/N/R/S/T) PC Interface USB Host, USB Device, LAN(LXI-C) Measurement Speed 10k readings/sec	44	IoT Technician (Smart Agriculture)	01 No.	7000	7000 ✓	0.07	Competitive Bidding
45	3GHz Spectrum Analyzer with built-in Tracking Generator, Frequency Range 9 kHz to 3.2 GHz Resolution Bandwidth(-3 dB): 10 Hz to 1 MHz Built in tracking generator Min. -148 dBm DANL Display 8" TFT or more PC Interface: USB Host & Device, LAN(LXI). **OR electronics Workbench (Item no. 39, 41, 42, 43, 44 and 45 can be preferred in the form of workbench.)**	45	IoT Technician (Smart Agriculture)	01 No.	30000	30000 ✓	0.3	Competitive Bidding
46	Multi Function Test & Measuring Tool for Field Applications and Testing compatible with Laptop, 300 MHz Bandwidth 2 Channel Digital Storage Oscilloscopes, Spectrum Analyzer. Arbitrary Waveform Generator Sine 50MHz ,Square 15MHz,Triangle 100KHz , AM -- FM Modulation, 16 Channel Logic Analyzer Frequency and Phase Meter USB 2.0/ 3.0 Interface	46	IoT Technician (Smart Agriculture)	01 No.	55000	55000 ✓	0.55	Competitive Bidding
47	Electrical Safety Trainer. Demonstration of importance of earthing in any electrical device. Arrangement to study role of fuse and types of slow blow, high blow fuse in any electronic circuit. Arrangement to study the importance of MCB and it's working	47	IoT Technician (Smart Agriculture)	01 No.	15000	15000 ✓	0.15	Competitive Bidding

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		Description						
48	Analog Component Trainer with following Seven Basic Modules. • Diode Characteristics (Si,Zener, LED) • Rectifier Circuits. • Diode as Clipper Circuit. • Diode as Clamping Circuit. • Zener as voltage regulator. • Transistor Type NPN & PNP and CE Characteristics. • Transistor as a switch. Breadboard for Circuit design DC power supply: +5V,1A (Fixed); +12V, 500mA (Fixed); ±12V, 500mA (Variable) AC power Supply: 9V-0V-9V, 500mA Function Generator: Sine, Square, Triangle (1Hz to 100KHz) Modulating Signal Generator: Sine, Square, Triangle (1Hz to 10KHz). Voltage, current and frequency on board LCD display. PC Interface – Acquisition from two analog input channel Simulation Software	48	IoT Technician (Smart Agriculture)	01 No.	5500	5500 ✓	0.055	Competitive Bidding
49	Digital IC Trainer, Breadboard: Regular DC Supply: +5 V/1 A +12V/1A Clock Frequency 4 different steps from 1Hz – 100KHz Amplitude: (TTL), 128x64 Graphical LCD, Pulser Switches, Data Switches: 8 Nos, LED: 8 Nos. (TTL),Seven Segment Display, Teaching &Learning Simulation Software	49	IoT Technician (Smart Agriculture)	01 No.	20000	20000 ✓	0.2	Competitive Bidding
50	IT Workbench for computer hardware and networking, The bench comprises with Computer Hardware Training System (02 Nos.) The different circuit boards of PC/AT Computer are exposed on a PCB, LAN Training System with Wireless LAN as well to study Peer to Peer, STAR, RING Topology. Protocols: CSMA /CD, CSMA /CA, Stop N Wait, Go back to N, Selective repeat, Sliding Window, Token Bus, Token Ring, Colored representation of data in transmission & reception. Data transmission speed: 10/100 Mbps, Smart managed 3 Layer and 2 Layer Switch, Media converter, POE Switch, Wi-Fi LAN card, IP Camera, Energy meter, LED tube light, Voltmeter and Ammeter will be fitted. Networking Fundamentals Teaching Simulation Software DSO 50MHz 4 Channel , 1GSa/Sec ,more than 20 Mpt memory DSO DMM : 41/2 Digit with LCD Display	50	IoT Technician (Smart Agriculture)	01 No.	350000	350000	3.5	Competitive Bidding
51	Laptop latest configuration	51	IoT Technician (Smart Agriculture)	01 No.	50000	50000	0.5	Competitive Bidding
52	Laser jet Printer	52	IoT Technician (Smart Agriculture)	01 No.	20000	20000	0.2	Competitive Bidding

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53	Internet Broadband Connection	53	IoT Technician (Smart Agriculture)		600	0	0	Competitive Bidding
54	Electronic circuit simulation software with five user licenses Circuit Design and Simulation Software with PCB Design with Gerber and G Code Generation, 3D View of PCB, Breadboard View, Fault Creation and Simulation.	54	IoT Technician (Smart Agriculture)		25000	25000	0.25	Competitive Bidding
55	Different types of electronic and electrical cables, connectors, sockets, terminations.	55	IoT Technician (Smart Agriculture)	As Required	9000	9000	0.09	Competitive Bidding
56	Different types of Analog electronic components, digital ICs, power electronic components, general purpose PCBs, bread board, MCB, ELCB	56	IoT Technician (Smart Agriculture)	As Required	20000	20000	0.2	Competitive Bidding
57	SMD Soldering & De soldering Station with necessary accessories, SMD Soldering & Desoldering Station Digitally Calibrated Temperature Control SMD Soldering & Desoldering Power Consumption: 60 Watts I/P Voltage: 170 to 270 V De-soldering : 70 Watt emperature Range : 180 to 480º Centigrade Power Consumption : 270 Watts Hot Air Temperature : 200 to 550º Centigrade	57	IoT Technician (Smart Agriculture)	01 No.	15000	15000	0.15	Competitive Bidding
58	SMD Technology Kit, SMD component identification board with SMD components Resistors, Capacitors, Inductors, Diodes, Transistors & IC's packages. Proto boards with readymade solder pads for various SMD Components. SMD Soldering Jig.	58	IoT Technician (Smart Agriculture)	01 No.	12000	12000 ✓	0.12	Competitive Bidding

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59	Microcontroller kits (8051) along with programming software (Assembly level Programming) With six important different application modules 1. Input Interface Switch, Matrix Keypad, ASCII Keypad 2. Display LCD, Seven Segment, LED Matrix 3. ADC & DAC 4. PC Interface module 5. Motor DC, Stepper, Servo 6. DAQ Core 8051 MCU clocked at 11.0592 MHz , supporting both programming modes Keypad and computer ,LCD for both programming and run mode, ready to run programmer to support family of controllers AT89C52 ,DC Power Supplies +12V, -12V, +5V & -5V, Breadboard to make circuits, Learning content through simulation Software and following application modules 1. Input Interface : 4x4 Matrix Keypad, ASCII Key PAD, Four Input Switch 2. Display 16X2 LCD, Seven Segment, LED Bar Graph 3. ADC/DAC with ADC/DAC0808 4. PC Interface: RS232 & USB 5. Motor Drive: DC, Servo, Stepper 6. DAQ: 4ch analog 10bit, 22 DIO resolution,6MHz Frequency Counter (square wave), DAQ with PC interface software	59	IoT Technician (Smart Agriculture)	01 No.	20000	20000	0.2	Competitive Bidding
60	Sensor Trainer Kit Containing following Sensors a) Air humidity and Temperature b) RTD c) Atmospheric Pressure d) Air Quality e) Smoke Detector Sensors f) Limit Switch g) Photo sensors h) Capacitive displacement IoT enabled Android based 7" Graphical touch LCD with inbuilt cortex processor & DAQ for acquiring analog data and software for viewing the output waveforms with USB storage and HDMI output. Ethernet port to connect real world. Inverting, Non – Inverting, Power, Current, Instrumentation and Differential Amplifier, F to V, V to F, I to V, V to I Converter, High Pass and Low Pass Filter, Buffer, LED, Buzzer, LED Bar Graph, Touch Switch Included Sensors :RTD,NTC Thermistor,LM35,Photovoltic, Air humidity and Temperature, Gas(Smoke), Air Quality, Atmospheric Pressure, Limit switch, Capacitive displacement	60	IoT Technician (Smart Agriculture)	02 Nos.	30000	60000	0.6	Competitive Bidding
61	Different types of electronic and electrical cables, connectors, sockets, terminations.	61	IoT Technician (Smart Agriculture)	As Required	10000		0	Competitive Bidding

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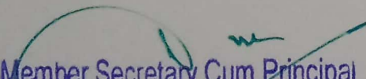|							
62	Different Microcontroller/Processor Training and Development Platform for AVR, PIC, ARM and Arduino. MCU PIC 16F877A , 4MHz, Onboard programmer will program Pic Devices, USB Port MCU ATMEGA8515 ,8MHz, onboard programmer will program ATMEGA series microcontroller, USB Port MCU LPC 2148 , 12MHz LED 8Nos, ADC 10 bit 10Nos, DAC 10bit, USB and RS232, RTOS support, JTAG Connector, USB2.0,Onboard Zigbee, I2C, SPI,RTC, DC motor, PWM, Sensor LM35 , Display 16X2 LCD Display , Motor Drive L293D 00mA (5-12V),Programmer USB Interface, Microcontroller AT mega328p (Arduino Based), 16MHz, Digital I/O Pins : 14 (of which 6 provide PWM output) , Flash Memory : 16KB (of which 2KB used by boot loader) Each platform should have Bread DC Power Supplies +12V, -12V, +5V & -5V, Breadboard to make circuits.	62	IoT Technician (Smart Agriculture)	01 No	50000	50000	0.5	Competitive Bidding
63	Internet of Things Explorer Processor : 64bit ARMv7 with 1GB RAM , Memory 32GB ,OS: Open source Linux, Connectivity: Wireless LAN, Bluetooth, Zigbee, USB & Ethernet, HDMI interface, 1.77" Color TFT LCD , Driver for Stepper and DC Motor, six 16 bit Analog put, RTC and 4-20mA input. Zigbee 2.4GHz, Sensors: Temperature and Humidity, Air Quality, Soil Moisture, Ambient Light, Soil/Water temperature, PIR Sensor. GSM IoT Gateway : Quad-Band 850/900/1800/1900 MHz - GPRS multi-slot class, Control via AT commands. Explore physical and application layer protocols like RS232, RS485, GSM, Ethernet and MQTT, CoAP, HTTP, FTP. Cloud/server configuration includes HTML, Java, php and mySQL. IoT Node: Wireless 2.4GHz Zigbee, 5 Analog Inputs and at least 3 Digital Outputs, At least one I2C Channel, support OTA. Online Cloud/Server Services for 2 years. Battery 3.7V/4400mAH with Solar Panel. USB interface.	63	IoT Technician (Smart Agriculture)		80000	80000	0.8	Competitive Bidding

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64	Field Interface and Protocol Simulation Kit, A console including :Any Branded Desktop Computer with Windows Operating System 1. Ethernet Devices with Isolated Supply and port ▪ 4 AI(0.1% FSR), 4 AO (0- 10VDC), Ethernet Port – Qty 1 ▪ 8 Relay Outputs, thernet Port – Qty 1 ▪ 8 Pulse Outputs, Ethernet Port – Qty 1 ▪ 8 Digital Inputs, Ethernet Port – Qty 1 ▪ 4 RS485 Slave ports, 1 Ethernet Port – Qty 4 2. 16 Port Ethernet Switch for networking of field ethernet devices 3. SMPS to power up multiple ethernet based field imulation devices 4. Required Connectors, Switches and LED indicators for Field Interface circuits such as Digital Inputs, Relay Outputs, Analog Inputs, Analog Outputs, Pulse Signals 5. Software ▪ Communication with simulation device on 1 No. ethernet MODBUS TCP Protocol ▪ Field Interface simulation using HMI replica of Console for easy understanding of students ▪ Port Simulation – Serial Port Terminal, TCP/IP, UDP, HTTP ▪ Protocol Simulation – MODBUS RTU Master/Slave, MODBUS TCP Master/Slave, DLMS Client IoT Protocol Simulations – MQTT topic publish subscribe simulation	64	IoT Technician (Smart Agriculture)	01 No.	65000	65000	0.65	Competitive Bidding
65	Solar Power Lab, Solar PV Modules. Open Circuit Voltage Voc 10V, Short Circuit Current ISC 0.60mA Maximum Power Voltage (Vmp) 8.80V, Maximum Power Current (Imp): 0.57A, Batteries , Voltage 6V, 4Ah. Buck & Boost Converter, Dusk to Dawn Sensing, LCD for Voltage and Current. Interactive Solar Training Software	65	IoT Technician (Smart Agriculture)	01 No.	50000	50000	0.5	Competitive Bidding
66	Solar PV Module Analyzer, Micro-controller Based with 16X2 LCD, PC Interface, mains & battery operated. Capable to measure Open Circuit Voltage and Short Circuit Current, Maximum Voltage and Current at Maximum Power DCV Range 0-50V, DCA Range 10A	66	IoT Technician (Smart Agriculture)	01 No.	150000	150000	1.5	Competitive Bidding

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67	Wireless Communication modules for interfacing with microcontrollers a) RFID Card Reader b) Finger Print c) Zigbee d) GPS e) GSM f) Bluetooth g) WiFi, Core 8051 MCU clocked at 11.0592 MHz, supporting both programming modes Key Pad and PC ,LCD for both programming mode and run mode, ready to run programmer to support family of controllers AT89C51/52 & 55 ,DC Power Supplies +12V, -12V, +5V & -5V,Breadboard to make circuits, detailed learning content through simulation Software and following pplication modules : RFID Card Reader ,Finger Print, Zigbee, GPS, GSM, Bluetooth and WiFi	67	IoT Technician (Smart Agriculture)	01 No.	50000	50000	0.5	Competitive Bidding
	Total Amount					1515220	15.152	

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