ARMY PUBLIC SCHOOL YOL CANTT
DISTRICT KANGRA
HIMACHAL PRADESH, PIN 176052

INVITATION OF TECHNICAL CUM COMMERCIAL BIDS FOR " INSTALLATION OF ROBOTIC/AI LAB AT ARMY PUBLIC SCHOOL YOL CANTT"

1. Sealed bids under Open Tender Enquiry are invited by Army Public School Yol Cantt for purchase and installation of AI/Robotic Lab at APS, Yol Cantt. The tender reference number is 1064/Works/Robotic/AI Lab/2021-22

2. The address and contact numbers for sending Bids or seeking clarifications regarding this RFP are given below: –

(a) **Bids / Queries to be addressed to**. Principal
Army Public School, Yol Cantt
District Kangra, HP, PIN 176052.

(b) **Postal address for sending the Bids**. Same as above.

(c) **Name/designation of the contact personnel**. Mr Umesh Pun
Army Public School,
Yol Cantt.

(d) **Telephone numbers of the contact personnel**. 8580711106

(e) **E-mail ids of contact personnel**. apsyolcantt@gmail.com

3. This RFP is divided into two Parts as follows:-

(a) **Part I**. Contains General Information and Instructions for the Bidders about the RFP such as the time, place of submission and opening of tenders, Validity period of tenders, etc.

(b) **Part II**. Contains essential details of Scope of work, Technical Specifications, Delivery Period, Mode of Delivery and Consignee details.

4. Placement of Order The Supply Order will be placed on successful conclusion of negotiations on L1 bidder.

5. This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the RFP, should it become necessary at any stage.

6. The vendors will submit their technical and commercial bids as per the format given in the tender document. The original copy should be attested the remaining two can be photocopies. If the original tender enquiry along with its appendices are not forwarded then the submitted tender would be rejected.

Name of person issuing tender

Army Public School Yol Camp.

Principal/प्रधानाचार्य
Army Public School
आर्मी पब्लिक स्कूल
Yol Cantt/योल कैन्ट

Part I – General Information

1. **Last date and time for depositing the bids**. The last date for depositing bids is **13 Jan 21**.

2. **Eligibility Criteria and Forwarding of Bids.** The bidder should have preferably installed at least one similar project in any school/Institution. Work order of the previous jobs to be Submitted(if any). Bids should be forwarded by Bidders under their original memo letter pad inter alia furnishing the under mentioned details :-

(a) Proof of Address of firm.
(b) Valid GST Regn No alongwith documentary support.
(c) PAN No along with documentary support.
(d) Work order of the previous job of similar nature (if any)
(e) ITR of last year.
(f) Bank details of complete postal and e-mail address of their office.

3. **Manner of Depositing the Bids**. Sealed Bids should be either dropped in the Tender Box marked as "Tender Box" and placed at Patiala Gate, Yol Cantt or sent by registered post/speed post at the address given below so as to reach by due date and time. Late tenders will not be considered. No responsibility will be taken for postal delays or non – delivery/ non – receipt of Bid documents. Bids forwarded/received through e-mail shall not be considered.

Principal
Army Public School, Yol Cantt,
District Kangra, HP
PIN 176052.

4. **Time and Date of Opening of Techno Commercial Bids**. **15 Jan 21** at 1100 hrs. If due to any exigency, the due date for opening of the Bids is declared a closed holiday, the Bids will be opened on the next working day at the same time or on any other day/time, as intimated by the School .

5. **Location of Tender Box**. Patiala Gate, Yol Cantt. Only those bids that are found in the tender box will be opened. Bids dropped in the wrong Tender Box will be rendered invalid. Bids may also be fwd through registered post. Such bids should reach school office well in time. Bids reaching late due to any reason (including postal delay) will not be accepted.

6. **Cost of Tender**. Crossed demand draft of Rs. 100/- (Rupees One Hundred only) in favour APS Yol Cantt, payable at SBI Yol Cantt will be deposited as tender fee (non-refundable). DD should be valid for minimum six months period. Tender fee is NOT exempted for any firm. The Demand draft will be deposited along with the bids.

7. **Opening of the Bids**. The physical verification of tender bids will be done by a Procurement Committee at Army Public School, Yol Cantt. The Bidders may depute their representatives, duly authorized in writing, to attend the opening of bids on the due date and time. However, the same is not mandatory. This event will not be postponed due to non-presence of your representative.

Army Public School Yol Cantt

Principal
Army Public School
Yol Cantt

8. **Bid System**. Only techno commercial bid (single bid) will be required from tenderers.

9. **Forwarding of Bid**. Bid should be forwarded by Bidders under their original memo/ letter pad inter alia furnishing details of GST Regn No, Bank details and complete postal and e-mail address of their office.

10. **Clarification Regarding Contents of the RFP**. A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 07 Jan 22 . Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have received the bidding documents.

11. **Modification and Withdrawal of Bids**.

(a) Any Tenderer, who proposes alterations to any of the condition, specifications laid down in the Tender documents or any new condition, whatsoever, is liable to be rejected. No bid shall be modified after the deadline for submission of bids.

(b) If a bidder desires to withdraw before bid submission closing date/time, he may do so but cost of the tender will not be refunded.

(c) No bid may be withdrawn in the interval between the deadline for submission of bids and expiry of the period of the specified bid validity.

12. **Clarification Regarding Contents of the Bids**. During evaluation and comparison of bids, the Buyer may, at its discretion, ask the bidder for clarification of his bid. The request for clarification will be given in writing and no change in prices or substance of the bid will be sought, offered or permitted. No post-bid clarification on the initiative of the bidder will be entertained. Should there be any requirement the buyer may ask the vendor to give a presentation and demonstration to clarify any matter on no cost no commitment basis.

13. **Rejection of Bids**. Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection. Conditional tenders will be rejected. This being a turnkey project, Bidders will bid for all items. Piecemeal/partial bids will be rejected.

14. **Validity of Bids**. The Bids should remain valid till 45 days from the last date of submission of the Bids.

15. **Earnest Money Deposit**. Bidders are required to submit Earnest Money Deposit (EMD) for amount of **Rs 10,000/- (Rupees ten housand only)** along with their bids. Further details are furnished below:-

(a) The same is to be enclosed in a separate envelope inside the main envelope and **NOT repeat NOT enclosed** in the envelope of Technical/Commercial Bids.

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(b) The EMD may be submitted in the form of a Bank draft/BG from any of the public sector banks or a private sector bank authorised to conduct business with government. The same is to be drawn in favour of **Army Public School Yol Cantt, payable at Yol.**

(c) **Validity.** The EMD is to remain valid for a period of **forty-five days** beyond the final bid validity period. EMD of the unsuccessful bidders will be returned to them, without any interest whatsoever, at the earliest after expiry of the final bid validity and latest on or before the 30th day after the award of the contract. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Bank guarantee from them as called for in the contract.

(d) **Forfeiture.** The EMD will be forfeited if the bidder withdraws or amends impairs or derogates from the tender in any respect within the validity period of their tender. If the successful vendor/firm fails to furnish the required performance security then the EMD furnished will be forfeited.

(e) **Payment.** **80%** payment will be made on completion of the project and rest **20%** payment will be made after **one month** ie after successful working of the system for **one month and satisfactory performance certificate** by the user.

16. **Performance Bank Guarantee (PBG).** The Bidder will be required to furnish a Performance Guarantee by way of Bank Guarantee through a public sector bank or a private sector bank authorised to conduct government business (ICICI Bank Ltd, Axis Bank Ltd or HDFC Bank Ltd) for amount of **10%** of the total cost of the project within **15 days** of receipt of the confirmed order. Performance Bank Guarantee will be kept with the **Principal, Army Public School, Yol Cantt, Himachal Pradesh, Pin 176052** and should be valid upto **12 months** from the date of supply order.

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S.No.....
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Yol Camp.

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Yol Cantt

PART II – ESSENTIAL DETAILS OF ITEMS/SERVICES REQUIRED

1. **Scope of Work**. The scope of work is given below.

S No	Nomenclature of Work	Quantity	Remarks
(a)	Robotics Lab Items	As per List	
(b)	AI Lab items	As per list	
(c)	Desktop Computer with software	03 Nos	
(d)	Projector	01 No	
(e)	Inverter	01 No	
(f)	UPS	01 No	
(g)	3-D Printer aloghwith accessories	01 No	
(h)	Safety equipment	01 No	

2. **Specifications**. The technical specifications and details of the work as mentioned at Ser No 1 above are shown as per **Appendix A**.

3. **Bid Systems**. **Techno Commercial** bid **(single bid)** is required to be furnished clause by clause compliance of specifications bringing out clearly the deviations from specifications, if any. Techno Commercial bid has to be submitted on the forms attached at **Appendix B .**

4. **Inspection and Acceptance Testing**.

(a) **Initial Inspection**. Physical inspection will be first carried out at **Army Public School Yol Cantt by the user.** The **user** will ensure that all the items delivered are as per bill of material. Items found defective/damaged/not conforming to technical QR will be replaced immediately by the seller with stores of correct specifications within **21 days** of inspection at his own cost and risk. **In case of any dispute, decision of the buyer will be final and binding.**

5. **Delivery Period**. Delivery period / installation would be **45 days** from the effective date of **supply order**. Please note that contract can be cancelled unilaterally by the Buyer in case item is not install within the contracted delivery period. Extension of instalol period will be at the sole discretion of the Buyer, with applicability of LD clause.

6. **Delivery & Installation**. The **tenderer** shall be responsible for the safe delivery **and installation** of the above nomenclature of work and at the consignee's site, free of cost.

7. **Consignee Details.**

Principal,
Army Public School,
Yol Camp,
Himachal Pradesh,
Pin 176052.

Army Public School S.No. Date Yol Camp

Principal Army School Yol Cantt

Appx A

(Ref to Para 2 Part II)

TECHNICAL SPECIFICATION FOR ROBOTICS LAB, AI LAB, DESKTOP COMPUTER WITH SOFTWARE, ULTRA-SHORT THROW INTERACTIVE CLASSROOM PROJECTOR, 3.5KVA INVERTER WITH TUBULAR BATTERY, UPS 1 KVA, 3-D PRINTER & SAFETY KIT

S.No.	Description	Qty
(a)	Robotics Lab Items	As per list
(b)	AI Lab Items	As per List
(c)	Desktop Computer with software	03
(d)	Projector	01
(e)	Inverter	01
(f)	UPS	01
(g)	3-D Printer	01
(h)	Safety equipment	01

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Appx B
(Ref to Para 3 Part II)

TECHNO COMMERCIAL BID AND COMPLIANCE STATEMENT FOR ROBOTICS LAB, AI LAB, DESKTOP COMPUTER WITH SOFTWARE, ULTRA-SHORT THROW INTERACTIVE CLASSROOM PROJECTOR, 3.5KVA INVERTER WITH TUBULAR BATTERY, UPS 1 KVA, 3-D PRINTER & SAFETY KIT

1. **Technical Standard Conditions.**

SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
1	Arduino	Arduino UNO or compatible microprocessor & microcontroller	Atmega 328P-8Bit AVR family Microcontroller,Equivallent or better. Operative voltage 5V,Digital I/O Pins 14,PWM Digital I/O Pins:6 Case cell encloser	Yes/No	Robotics lab
2			Case cell,and USB Cable	Yes/No	
3	Arduino	Arduino Nano	"Atmega 328P-8Bit AVR family Microcontroller,Equivallent or better. Operative voltage 5V,Digital I/O Pins 14, Analog input pins 8	Yes/No	
4	GL12	Breadboards & Mini Breadboard	Solderless 400 points	Yes/No	
5	Arduino		Self Adhesive Proto shield	Yes/No	
6	White Label	General purpose Soldering Board	FR2 A Grade Material(140*90mm)	Yes/No	
7	White Label		FR2 A Grade Material(80*55mm)	Yes/No	
8	White Label		Female Berg Strip 40 Pins Single Row	Yes/No	
9	White Label		Male Berg Strip 40 Pins Single Row	Yes/No	
10	White Label	16x2 LCD display with I2C	Dot matrix LCD display with 16 charactersx 2 lines	Yes/No	
11	Arduino	USB Cables	USB Cable Set (A to B) 12 inches	Yes/No	
12	Arduino	USB Cables	USB Cable Set (Mini) 12 inches	Yes/No	

Army Public School Yol Camp. Date

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No	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
13	White label	9 Volt battery,	9V-12V, battery Battery Simple - 8 Battery Rechargable - 2 Charger - 2	Yes/No	
14	White label	Multiple resistors	Resistor Kit (Different Value)	Yes/No	
15	White label	capacitors for electronics Project various Size	Capacitor Kit (Different value)	Yes/No	
16	White label	capacitors for electronics Project various Size	Electrolyte capacitor Kit (Kit Consist with 5 different value)	Yes/No	
17	Fairchild	Line Voltage Regulator	7805	Yes/No	
18	Fairchild	Line Voltage Regulator	7809	Yes/No	
19	Arduino	8*8 LED Matrix Module	Max 7219 Dot LED Matrix Module MCU control LED Display Module	Yes/No	
20	Arduino	Bluetooth	HC 05 working voltage 5 Volt	Yes/No	
21	Arduino	7 Segment LED Display	LED 4-digit Display Module w/t clock point /4 pin DuPont line for Arduino (20cm)	Yes/No	
22	Arduino	Laser Diode	650Nm,6mm,5V DC,5mw mini Laser dot diode module	Yes/No	
23	Arduino	LDR Module	Photosensitive LDR light sensor module	Yes/No	
24	Arduino	Keypad	Universal 16 Key switch keypad	Yes/No	
25	Arduino	Joy Stick	Joy stick module for Arduino	Yes/No	
26	White Label	Active Buzzer	Small 5 Volt	Yes/No	
27	White Label	Active Buzzer	Big 5 Volt	Yes/No	
28	Texas	Motor Driver	L293d Motor Driver Module	Yes/No	
29	Arduino	DC Plastic Gear motor with wheel	12V,150 RPM,Side shaft, Battery operated	Yes/No	
30	Arduino	Node MCU	ESP 8266 I2C,1 Wire,Plug and Play	Yes/No	
31	Arduino	Wemos D1 R2	WeMos D1 R2 with Wi-Fi,ESP 8266	Yes/No	

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No	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
32	White Label	Vibrating Motor	Vibrating Motor Opertating Voltage 1.5 to 3V	Yes/No	
33	White Label	Alligator Connectors	Multi Colour Alligator Connectors	Yes/No	
34	White Label	Battery clips with DC Jack	9 volt battery clips with DC Jack	Yes/No	
35	White Label	Hook-up Wires	Red & Black set 100 Meters each	Yes/No	
36	White Label	Jumper Cable	Male - Male	Yes/No	
37	White Label	Jumper Cable	Male-Female	Yes/No	
38	White Label	Jumper Cable	Female -Female	Yes/No	
39	White Label	RGB LEDs	Regular 5mm 3-5 volt Range	Yes/No	
40	White Label	LEDs (Red)	Regular 5mm 3-5 volt Range	Yes/No	
41	White Label	LEDs (Green)	Regular 5mm 3-5 volt Range	Yes/No	
42	White Label	LEDs (Blue)	Regular 5mm 3-5 volt Range	Yes/No	
43	White Label	LEDs (Yellow)	Regular 5mm 3-5 volt Range	Yes/No	
44	White Label	LEDs (White)	Regular 5mm 3-5 volt Range	Yes/No	
45	Texas	555 Timer IC	555 Timer IC 4.5V to 16 Volt	Yes/No	
46	Texas	Diode	1N4007 – 25 in each pkt 1N 4006 – 25 in each pkt Zener Diode 4.6V-25 in each pkt Zener diode 2.5V-25 in each pkt	Yes/No	
47	Texas	Transistor Kit	BC-577 – 25 in each pkt BC 557 - 25 in each pkt	Yes/No	
48	White Label	Push Button Switch	Tactile Switch Micro - Push Button- 100 each Toggle switch- 100 each	Yes/No	
49	Arduino	Capacitive touch module	MPR 121 with I2C Voltage range 2.7V to 5.5V.	Yes/No	
50	Arduino	Capacitive Touch Switch Module	Digital Capacitive Touch Switch Module TTP223B	Yes/No	
51	Arduino	IR Sensors Obstacle	LM 393 Detectation Distance 2-30 C.M Detection angle 30-40 Degree	Yes/No	

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Army School
सेना विद्यालय
Yol Cantt/Jatel देवभूमि

No	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
52	Arduino	Triple Axis Magnetometer	3 Axis Magneto Resistive SensorsI2C Digital Interface Integrated 12 bit ADC	Yes/No	
53	Arduino	Humidity Sensor	Operating range: 20 - 95 % RH Temperature: 0 - 60 Celsius Power supply: 1.5V AC(Max sine) Operating frequency: 500Hz -2KHZ	Yes/No	
54	Grove	MQ Series	MQ - 2 Smoke Detection	Yes/No	
55	Grove	MQ Series	MQ-3 Alcohol - Ethanol Sensor	Yes/No	
56	Grove	MQ Series	MQ-4 Methane Natural Gas Sensor	Yes/No	
57	Grove	MQ Series	MQ-5 Methane Liquified Gas Sensor	Yes/No	
58	Grove	MQ Series	MQ-6 Liquified Petroleum Gas Sensor	Yes/No	
59	Grove	MQ Series	MQ-7 High Sensitivity CO Carbon Monoxide Sensor Detector	Yes/No	
60	Grove	MQ Series	MQ-8 Hydrogen Gas Sensor	Yes/No	
61	Grove	MQ Series	MQ-135 Air Quality Sensor Smoke Fast response Stable and long life Simple drive circuit	Yes/No	
62	White Label	IR (transmitter) receiver	TSOP 1738 Switching rate – 38 KHz	Yes/No	
63	Arduino	Ultrasonic Sensor Module HC-SR-04 or compatible	Power supply Quiescent current Working current Effectual angle Ranging distance Resolution Working angle & dimension	Yes/No	
64	Grove	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 Temperature stability	Yes/No	
65	Grove	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	Yes/No	

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
66	Arduino	Pulse Rate heart sensor	Pulse Rate Sensor Finger Based wore on the finger or earlobe Working voltage 3-5V	Yes/No	
67	Arduino compatible	Relay Module	5V 10A 2 Channel Relay Module	Yes/No	
68	Arduino compatible	Relay Module	5V 10A 1 Channel Relay Module	Yes/No	
69	Arduino compatible	Soil Moisture Sensor Module	FC-28with LM 293 Comparator Operating Voltage 3.3V to 5 Volt	Yes/No	
70	Arduino compatible	Touch Sensor	Capacitive Touch Sensor Module TTP 22X series Operating Voltage 2.4V to 5.5V	Yes/No	
71	Arduino compatible	Metal touch sensor module	KY-036 or Equivalent Metal Touch sensor Module	Yes/No	
72	Arduino compatible	Rain Drop Sensor	Rain Sensitive , Rain Drop Detection Sensor Module	Yes/No	
73	Keys	Flex Sensor	Flex Sensor 2.2 Inches	Yes/No	
74	Taxes	Temperature Sensor	Temperature Sensor Lm35	Yes/No	
75	Keys	Temperature & Humidity sensor Module	DTH 11 Voltage range 3v-5V	Yes/No	
76	Keys	Force Pressure Sensor	Force sensitive resistor with a square, 1.75x1.5", sensing area	Yes/No	
77	Arduino	Colour Recognition Sensor	TCS3200 Colour Recognition Sensor	Yes/No	
78	Arduino	Water Flow Sensor	Arduino Compatible water flow sensor 5V Dc Input	Yes/No	
79	Arduino	Sound Sensor	Sound Sensor Module, Microphones module	Yes/No	
80	Arduino	IR Sensors Array for Line following	IR Sensors Array for Line Following	Yes/No	
81	Syska	10000 MH 5 volt Power Bank	10000 MAH 5 volt Power Bank	Yes/No	

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
82	Arduino	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 Read range between 20 cm to 1 m	Yes/No	
83	Grove	RF Modules Tx & Rx 315 MHz ASK	Frequency Range: 433.92/315 MHz Supply Voltage: 3 – 6 V Output Power : 4 – 16 Dbm Low power consumption Easy application	Yes/No	
84	Adafruit	Stepper Motor with Driver board	28BY J-48 ULN2003 5V Stepper motor+ULN2003 Driver Board	Yes/No	
85	White Label	DC Motor	12V, DC gear 150 RPM	Yes/No	
86	White Label	Servo motors	Position Servo Angle based Metal Gear	Yes/No	
87	White Label	Servo motors	Small Servo Metal Gear	Yes/No	
88	White Label	Servo motors	Continuous Metal Gear Servo 360	Yes/No	
89	White Label	Servo motors	Small Servo Plastic Gear	Yes/No	
90	Arduino	L298P Motor Driver	L298P Motor Driver shield or Relative driver shield	Yes/No	
91	Arduino	Servo motor Tester	CCPM 3 channel servo motor tester	Yes/No	
92	White Label	Robotics DIY KIT	4 wheel robotics kit 4 Motor,1 Chesis Set,1X battery Pack,4X wheel	Yes/No	
93	DJI	STEM Learning Application Kit DI Tello Drone	DJI Tello Drone (Programmable)	Yes/No	

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
94	Raspberry pi	Raspberry pi 4	Raspberry Pi 4 Model B/8GB. 1X Class 10A, 32 GB Memory Card Rasberry Pi 4 Case Mini HDMI to HDMI Cable OTG Cable 5V3A Power Adapter With EU plug Camera cable Nano wireless USB Adapter Heat Sink Set of GPIO Header Pins Screwdriver Set of Screws & Nuts 5 MP Camera Module Night Vision Camera 5MP HD WebCam PoE + HAT. 1x Sense HAT. 1x 7" Touch Display. 1x	Yes/No	**AI LAB** Multipurpose DIY Kit for Face Recogition, Video Recognition, Object Detection, Voice Reognition and IoT projects. Recommended for 13 to 18 years.

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
95	Desktop Computer		Processor: Intel® Core™ i5-7300U Processor or equivalent with minimum SYSmark® 2018 Rating of 750 or higher Graphic Card: Integrated graphics Form Factor: - USFF (Ultra Small Form factor) System chassis volume less than One Litre RAM: 8GB DDR4 - 2400MHz or above Storage: 1TB HDD - 7200 rpm Display: 18.5" LED Monitor with HDMI, in-built-speaker, Keyboard: Keyboard with numerical keypad (recommended) Mouse: Optical Mouse Webcam: Full HD Camera Headphones with Mic Dual Band Wireless Connectivity Min 800 Mbps Bluetooth V4.2 or Higher Ports: 4 USB 3.0 ports, dual high-definition display ports (HDMI 2.0/DP/thunderbolt 3.0 ports), High definition 8-channel audio through HDMI interface or through audio jack. **Software**: Windows 10 original Anti Virus Activated	Yes/No	

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
96	Computer	Desktop Computer	Intel® Celeron® processor Windows 10 Home Single Language 64 4 GB DDR4-2400 SDRAM (1 x 4 GB) 1 TB 7200 rpm SATA HDD Intel® UHD Graphics 600 18.5" LED Monitor Keyboard: Keyboard with numerical keypad (recommended) Mouse: Optical Mouse	Yes/No	
97	Projector		Ultra-Short Throw Interactive Classroom Projector Brand: Epson	Yes/No	
98	Inverter		3.5kVA Inverter and RC18000 150Ahx4 Tubular Battery Brand: Luminous	Yes/No	
99	UPS		UPS 1 KVA	Yes/No	
100	**3D Printer**		WOL 3D Printer	Yes/No	
			Filament for 3D printer	Yes/No	
			Filament Storage Box	Yes/No	
			Cardboard	Yes/No	
			Foam Core board	Yes/No	
			20 mtr Spool of Thick strings Various color	Yes/No	
			Rubber band	Yes/No	
			Popsicle Sticks	Yes/No	
			Wood Glue Bottle (500 ml)	Yes/No	
101	**Safety equipment**		Standard first aid kit	Yes/No	
			Fire extinguisher (handy units)	Yes/No	
			Safety goggles (without LED torch)	Yes/No	
			Safety Gloves Pairs	Yes/No	
			Safety Mask	Yes/No	
102	Teacher's Training	For Robotics / AI Lab	5 days for min 10 teachers	Yes/No	

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SNo	Product Make	Product Name	Description	Compiled /Not Compiled	Remarks
103	Year long support	For Robotics / AI Lab	Project Support as an when required.	Yes/No	
			Monthly Virtual Session of 2-3 Hours	Yes/No	
104	Experience	For Robotics / AI Lab	03 years' experience as Government vendor.	Yes/No	
105	Warranty		Minimum 01 year warranty of the equipment.	Yes/No	
106	Support	For Robotics / AI Lab	Local office near by school.	Yes/No	
			Toll free number for support.	Yes/No	

2. **Details to be furnished by the Bidder.**

S/No	Enclosure	Details Furnished Yes/No	Copy Attached Yes/No
(a)	Proof of the address with phone/fax/mobile numbers		
(b)	Proof of ESM if applicable		
(c)	GST No		
(d)	GST Proof		
(e)	PAN/TAN		
(f)	PAN/TAN Proof		
(g)	Proof of Aadhar Card		
(h)	Bank Details		
(j)	Last year ITR		
(k)	Proof of similar work done in past		

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3. **Commercial.**

(a) Robotics Lab						
SNo	**Product Make**	**Product Name**	**Description**	**Qty**	**Rate per unit**	**Total amount**
1	Arduino	Arduino UNO or compatible microprocessor & microcontroller	Atmega 328P-8Bit AVR family Microcontroller,Equivallent or better. Operative voltage 5V,Digital I/O Pins 14,PWM Digital I/O Pins:6 Case cell encloser	01		
2	-do-	-do-	Case cell,and USB Cable	01		
3	Arduino	Arduino Nano	"Atmega 328P-8Bit AVR family Microcontroller,Equivallent or better. Operative voltage 5V,Digital I/O Pins 14, Analog input pins 8	01		
4	GL12	Breadboards & Mini Breadboard	Solderless 400 points	01		
5	Arduino		Self Adhesive Proto shield	01		
6	White Label	General purpose Soldering Board	FR2 A Grade Material(140*90mm)	01		
7	White Label		FR2 A Grade Material(80*55mm)	01		
8	White Label		Female Berg Strip 40 Pins Single Row	01		
9	White Label		Male Berg Strip 40 Pins Single Row	01		
10	White Label	16x2 LCD display with I2C	Dot matrix LCD display with 16 charactersx 2 lines	01		
11	Arduino	USB Cables	USB Cable Set (A to B) 12 inches	01		
12	Arduino	USB Cables	USB Cable Set (Mini) 12 inches	01		
13	White label	9 Volt battery,	9V-12V, battery Battery Simple - 8 Battery Rechargable - 2 Charger - 2	01		
14	White label	Multiple resistors	Resistor Kit (Different Value)	01		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
15	White label	capacitors for electronics Project various Size	Capacitor Kit (Different value)	01		
16	White label	capacitors for electronics Project various Size	Electrolyte capacitor Kit (Kit Consist with 5 different value)	01 box		
17	Fairchild	Line Voltage Regulator	7805	01		
18	Fairchild	Line Voltage Regulator	7809	01		
19	Arduino	8*8 LED Matrix Module	Max 7219 Dot LED Matrix Module MCU control LED Display Module	01		
20	Arduino	Bluetooth	HC 05 working voltage 5 Volt	01		
21	Arduino	7 Segment LED Display	LED 4-digit Display Module w/t clock point /4 pin DuPont line for Arduino (20cm)	01		
22	Arduino	Laser Diode	650Nm,6mm,5V DC,5mw mini Laser dot diode module	01		
23	Arduino	LDR Module	Photosensitive LDR light sensor module	01		
24	Arduino	Keypad	Universal 16 Key switch keypad	01		
25	Arduino	Joy Stick	Joy stick module for Arduino	01		
26	White Label	Active Buzzer	Small 5 Volt	01		
27	White Label	Active Buzzer	Big 5 Volt	01		
28	Texas	Motor Driver	L293d Motor Driver Module	01		
29	Arduino	DC Plastic Gear motor with wheel	12V,150 RPM,Side shaft, Battery operated	01		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
30	Arduino	Node MCU	ESP 8266 I2C,1 Wire,Plug and Play	01		
31	Arduino	Wemos D1 R2	WeMos D1 R2 with Wi-Fi,ESP 8266	01		
32	White Label	Vibrating Motor	Vibrating Motor Opertating Voltage 1.5 to 3V	01		
33	White Label	Alligator Connectors	Multi Colour Alligator Connectors	01		
34	White Label	Battery clips with DC Jack	9 volt battery clips with DC Jack	01		
35	White Label	Hook-up Wires	Red & Black set 100 Meters each	01		
36	White Label	Jumper Cable	Male - Male	01		
37	White Label	Jumper Cable	Male-Female	01		
38	White Label	Jumper Cable	Female -Female	01		
39	White Label	RGB LEDs	Regular 5mm 3-5 volt Range	01		
40	White Label	LEDs (Red)	Regular 5mm 3-5 volt Range	01		
41	White Label	LEDs (Green)	Regular 5mm 3-5 volt Range	01		
42	White Label	LEDs (Blue)	Regular 5mm 3-5 volt Range	01		
43	White Label	LEDs (Yellow)	Regular 5mm 3-5 volt Range	01		
44	White Label	LEDs (White)	Regular 5mm 3-5 volt Range	01		
45	Texas	555 Timer IC	555 Timer IC 4.5V to 16 Volt	01		
46	Texas	Diode	1N4007 – 25 in each pkt 1N 4006 – 25 in each pkt Zener Diode 4.6V-25 in each pkt Zener diode 2.5V-25 in each pkt	01 pkt		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
47	Texas	Transistor Kit	BC-577 – 25 in each pkt BC 557 - 25 in each pkt	01		
48	White Label	Push Button Switch	Tactile Switch Micro - Push Button- 100 each Toggle switch- 100 each	01		
49	Arduino	Capacitive touch module	MPR 121 with I2C Voltage range 2.7V to 5.5V.	01		
50	Arduino	Capacitive Touch Switch Module	Digital Capacitive Touch Switch Module TTP223B	01		
51	Arduino	IR Sensors Obstacle	LM 393 Detectation Distance 2-30 C.M Detection angle 30-40 Degree	01		
52	Arduino	Triple Axis Magnetometer	3 Axis Magneto Resistive Sensors I2C Digital Interface Integrated 12 bit ADC	01		
53	Arduino	Humidity Sensor	Operating range: 20 - 95 % RH Temperature: 0 - 60 Celsius Power supply: 1.5V AC(Max sine) Operating frequency: 500Hz -2KHZ	01		
54	Grove	MQ Series	MQ - 2 Smoke Detection	01		
55	Grove	MQ Series	MQ-3 Alcohol - Ethanol Sensor	01		
56	Grove	MQ Series	MQ-4 Methane Natural Gas Sensor	01		
57	Grove	MQ Series	MQ-5 Methane Liquified Gas Sensor	01		
58	Grove	MQ Series	MQ-6 Liquified Petroleum Gas Sensor	01		
59	Grove	MQ Series	MQ-7 High Sensitivity CO Carbon Monoxide Sensor Detector	01		
60	Grove	MQ Series	MQ-8 Hydrogen Gas Sensor	01		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
61	Grove	MQ Series	MQ-135 Air Quality Sensor Smoke Fast response Stable and long life Simple drive circuit	01		
62	White Label	IR (transmitter) receiver	TSOP 1738 Switching rate – 38 KHz	01		
63	Arduino	Ultrasonic Sensor Module HC-SR-04 or compatible	Power supply Quiescent current Working current Effectual angle Ranging distance Resolution Working angle & dimension	01		
64	Grove	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 Temperature stability	01		
65	Grove	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	01		
66	Arduino	Pulse Rate heart sensor	Pulse Rate Sensor Finger Based wore on the finger or earlobe Working voltage 3-5V	01		
67	Arduino compatible	Relay Module	5V 10A 2 Channel Relay Module	01		
68	Arduino compatible	Relay Module	5V 10A 1 Channel Relay Module	01		
69	Arduino compatible	Soil Moisture Sensor Module	FC-28with LM 293 Comparator Operating Voltage 3.3V to 5 Volt	01		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
70	Arduino compatible	Touch Sensor	Capacitive Touch Sensor Module TTP 22X series Operating Voltage 2.4V to 5.5V	01		
71	Arduino compatible	Metal touch sensor module	KY-036 or Equivalent Metal Touch sensor Module	01		
72	Arduino compatible	Rain Drop Sensor	Rain Sensitive , Rain Drop Detection Sensor Module	01		
73	Keys	Flex Sensor	Flex Sensor 2.2 Inches	01		
74	Taxes	Temperature Sensor	Temperature Sensor Lm35	01		
75	Keys	Temperature & Humidity sensor Module	DTH 11 Voltage range 3v-5V	01		
76	Keys	Force Pressure Sensor	Force sensitive resistor with a square, 1.75x1.5", sensing area	01		
77	Arduino	Colour Recognition Sensor	TCS3200 Colour Recognition Sensor	01		
78	Arduino	Water Flow Sensor	Arduino Compatible water flow sensor 5V Dc Input	01		
79	Arduino	Sound Sensor	Sound Sensor Module, Microphones module	01		
80	Arduino	IR Sensors Array for Line following	IR Sensors Array for Line Following	01		
81	Syska	10000 MH 5 volt Power Bank	10000 MAH 5 volt Power Bank	01		
82	Arduino	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 Read range between 20 cm to 1 m	01		

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SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
83	Grove	RF Modules Tx & Rx 315 MHz ASK	Frequency Range: 433.92/315 MHz Supply Voltage: 3 – 6 V Output Power : 4 – 16 Dbm Low power consumption Easy application	01		
84	Adafruit	Stepper Motor with Driver board	28BY J-48 ULN2003 5V Stepper motor+ULN2003 Driver Board	01		
85	White Label	DC Motor	12V, DC gear 150 RPM	01		
86	White Label	Servo motors	Position Servo Angle based Metal Gear	01		
87	White Label	Servo motors	Small Servo Metal Gear	01		
88	White Label	Servo motors	Continuous Metal Gear Servo 360	01		
89	White Label	Servo motors	Small Servo Plastic Gear	01		
90	Arduino	L298P Motor Driver	L298P Motor Driver shield or Relative driver shield	01		
91	Arduino	Servo motor Tester	CCPM 3 channel servo motor tester	01		
92	White Label	Robotics DIY KIT	4 wheel robotics kit 4 Motor,1 Chesis Set,1X battery Pack,4X wheel	01		
93	DJI	STEM Learning Application Kit DI Tello Drone	DJI Tello Drone (Programmable)	01		

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(b) AI Lab

SNo	Product Make	Product Name	Description	Qty	Rate per unit	Total amount
1	Raspberry pi	Raspberry pi 4	Raspberry Pi 4 Model B/8GB. 1X Class 10A, 32 GB Memory Card Rasberry Pi 4 Case Mini HDMI to HDMI Cable OTG Cable 5V3A Power Adapter With EU plug Camera cable Nano wireless USB Adapter Heat Sink Set of GPIO Header Pins Screwdriver Set of Screws & Nuts 5 MP Camera Module Night Vision Camera 5MP HD WebCam PoE + HAT. 1x Sense HAT. 1x 7" Touch Display. 1x	01		

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SNo	Product Name	Description	Qty	Rate per unit	Total amount
2	Desktop Computer	Processor: Intel® Core™ i5-7300U Processor or equivalent with minimum SYSmark® 2018 Rating of 750 or higher Graphic Card: Integrated graphics RAM: 8GB DDR4 - 2400MHz or above Storage: 1TB HDD - 7200 rpm Display: 18.5" LED Monitor with HDMI, in-built-speaker, Keyboard: Keyboard with numerical keypad (recommended) Mouse: Optical Mouse Webcam: Full HD Camera Headphones with Mic Dual Band Wireless Connectivity Min 800 Mbps Bluetooth V4.2 or Higher Ports: 4 USB 3.0 ports, dual high-definition display ports (HDMI 2.0/DP/thunderbolt 3.0 ports), High definition 8-channel audio through HDMI interface or through audio jack. **Software**: Windows 10 original Anti Virus Activated	01		
3	Desktop Computer	Intel® Celeron® processor Windows 10 Home Single Language 64 4 GB DDR4-2400 SDRAM (1 x 4 GB) 1 TB 7200 rpm SATA HDD Intel® UHD Graphics 600 18.5" LED Monitor Keyboard: Keyboard with numerical keypad (recommended) Mouse: Optical Mouse	01		

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SNo	Product Name	Description	Qty	Rate per unit	Total amount
4	Projector	Ultra-Short Throw Interactive Classroom Projector Brand: Epson	01		
5	Inverter	3.5kVA Inverter and RC18000 150Ahx4 Tubular Battery Brand: Luminous	01		
6	UPS	UPS 1 KVA	01		
7	**3D Printer**	WOL 3D Printer	01		
		Filament for 3D printer	01		
		Filament Storage Box	01		
		Cardboard	01		
		Foam Core board	01		
		20 mtr Spool of Thick strings Various color	01		
		Rubber band	01		
		Popsicle Sticks	01		
		Wood Glue Bottle (500 ml)	01		
8	**Safety equipment**	Standard first aid kit	01		
		Fire extinguisher (handy units)	01		
		Safety goggles (without LED torch)	01		
		Safety Gloves Pairs	01		
		Safety Mask	01		
9	Teacher's Training	5 days for min 10 teachers			
10	Year long support	Project Support as an when required,			
		Monthly Virtual Session of 2-3 Hours			
11	Taxes				
12	Instln Charges				
13	Any other expdr				
14	Total Amount				

Name of Firm
Sig of Prop with seal.

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