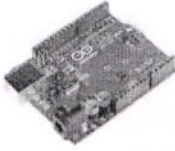

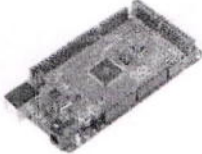




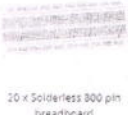






## RFP/RFQ for Establishment of Atal Tinkering Lab: APS Bathinda

APS Bathinda is wishes to setting-up an Atal tinkering lab in its campus. To keep the nature & functionality of the lab as per the Govt. Guidelines, the lab must incorporates all components prescribed in packages P1, P2, P3 & P4 but with the reduced quantity (50% or more) and Storage Items. The lab must contain the following items:






### Package 1: Electronics Development, Robotics, Internet of Things and Sensors

SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
1	Electronics Development	Arduino Uno or equivalent   30 x Arduino UNO R3	ATmega328P - 8 bit AVR family microcontroller, equivalent or better.	15
			Operating Voltage: 5V	
			Digital I/O Pins: 14 (of which 6 provide PWM output)	
			PWM Digital I/O Pins : 6	
			Accessories : Case shell enclosure, compatible USB cable (length - 6 inch or more)	
2	Electronics Development	Arduino Nano or equivalent   10 x Arduino Nano	ATmega328P - 8 bit AVR family microcontroller, equivalent or better.	5
			Operating Voltage: 5V	
			Digital I/O Pins : 14 (of which 6 provide PWM output)	
			Analog Input Pins : 8	
			Accessories : Compatible USB cable ( length -6 inch or more)	
3	Electronics Development	Arduino Mega or equivalent   10 x Arduino Mega 2560	AT mega 2560P - 8 bit AVR family microcontroller, equivalent or better.	5
			Operating Voltage: 5V	
			Digital I/O Pins : 54 (of which 6 provide PWM output)	
			Analog Input Pins: 16	
			Accessories: Case shell enclosure, Compatible USB cable ( length -6 inch or more)	
4	Electronics Development	Raspberry Pi 3 Model B+   5 x Raspberry Pi 3 Model B+	RASPBERRY PI 3 MODEL B+, equivalent or better	2
			Accessories – Micro SD card - 32 GB, USB 3.0 cable (1meter), HDMI to VGA - 1 meter, HDMI to VGA adapter, Case shell enclosure	














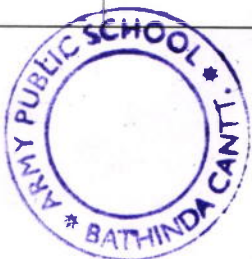
SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
5	Electronics Development	Breadboards & Mini Breadboard  30 x 50mm Solderless 400 pin Breadboard  20 x Solderless 800 pin breadboard	Solderless 400 pin breadboard	15
			Solderless 800 pin breadboard	10
			Self-Adhesive Proto Shield	10
6	Electronics Development	General Purpose solderable Board  30 x 90mm (140 x 90mm) Board	FR2 A Grade Material (140 x 90 mm)	15
			FR2 A Grade Material (80 x 55 mm)	15
		Berg Strips  30 x Female Berg Strip (25 x 140) Pitch: 2.54mm	Female Berg Strip, 2.54mm pitch, 40 pin single row, breakable pin	15
			Male Berg Strip, 2.54mm pitch, 40 pin single row, breakable pin	15
7	Electronics Development	16x2 LCD display  16 x 2 LCD	Dot matrix LCD display. 16 characters X 2 lines. I2C	10
8	Electronics Development	USB Cables  30 x USB Cable A-B	USB Cable Set (A to B, 12 inch or more)	5
9	Electronics Development	USB Cables  30 x Mini USB Cable	USB Cable Set (Mini, 12 inches or more)	5
10	Electronics Development	Battery  30 x Rechargeable Lithium Ion Battery	9-12V 2000 to 2500 mAh rechargeable battery with 2 chargers. Equivalent or better	5



SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
11	Electronics Development	Resistor Kit  20 x Set of 30 1.5, 4.7, 10, 47, 100, 220, 330, 470, 80, 1k, 2.2k, 3.3k, 4.7k, 10k, 22k, 7k 100k, 330k, 1M Ohm Resistors	One kit contains - 30 carbon film resistors of 20 different resistance values each assorted, packaged together and labelled. Wattage: 0.125W to 1W Values: 00, 1.50, 4.70, 100, 470, 1000, 2200, 3300, 4700, 6800, 10k, 2.2k0, 3.3k0, 4.7k0, 10k0, 22k0, 47k0, 100k0, 330k0, 1M0	10
12	Electronics Development	Capacitor Kit  20 x Set of 20 (10µF, 22µF, 100µF, 1µF, 10nF, 100nF, 1µF, 10µF, 100µF, 1000µF) Capacitors	One kit contains - 20 electrolytic capacitors of 10 different capacitance values each. Assorted kit packaged together and labelled. Values: 10pF, 22pF, 100pF, 1nF, 10nF, 100nF, 1..1F, 14/F, 1001.1F, 1000pf	10
13	Electronics Development	Linear Voltage Regulator  20 x Set of 1 (7805, 7809 and 7812) Voltage Regulator	7805, 7812, 7809	15
14	Electronics Development	Water Pump module  4 x 12V 3W Water Pump	DC12V 3W Submersible Water Pump	2
15	Electronics Development	Piezoelectric Plate  30 x LDR Photosensitive Sensor Module	Normal Copper based 4 cm Diameter approx.	15












SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
16	Electronics Development	8*8 LED Matrix Module 	Max7219 Dot LED Matrix Module. MCU Control LED Display Module	5
17	Electronics Development	Bluetooth module  <small>15 x Bluetooth Module (HC05)</small>	HC 05 Bluetooth module Voltage Rating: 5 V	8
18	Electronics Development	7 Segment Led Display  <small>20 x 7 Segment Display (4-Digit)</small>	LED 4-Digit Display Module Voltage Rating: 2.4V to 5.5V 4-Pin interface: Vcc, Gnd, Data, Clock	10
19	Electronics Development	GSM  <small>4 x SIM800L</small>	Sim 900 GPRS Transfer Board Micro Sim Gsm Core TTL Port Module for Arduino	2
20	Electronics Development	 <small>4 x GPS module (M122) 5MHz</small> GPS	GY-NEO6MV2 new GPS module	2
21	Electronics Development	Laser Diode Emitter  <small>10 x Laser Diode 650nm</small>	650 nm 5mW Mini Laser Dot Diode Module	5
22	Electronics Development	LDR Module  <small>30 x LDR Photosensitive Sensor Module</small>	5mm/12mm, Photosensitive LDR Light Sensor Module	15
23	Electronics Development	Keypad  <small>16 x Keypad Module</small>	Universal 16 Key Switch Keypad	5
24	Electronics Development	Joy Stick  <small>10 x joystick Module</small>	2-axis joystick with push button function	5
25	Electronics Development	Active Buzzer  <small>10 x Buzzer 5V</small>	Small 5 volt	20
			Big 5 volt  <small>10 x Buzzer 5V</small>	20








SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
26	Electronics Development	Motor driver Module  <small>10 x Motor Driver L293D</small>	L293D	5
27	Electronics Development	Sound Playback Module  <small>10 x Sound Playback Module (Voice Recorder)</small>	ISD1820 voice recording module or equivalent	5
28	Electronics Development	DC Plastic Gear motor with wheel  <small>40 x DC Motor 5V</small>	12V, 150RPM, Side Shaft BO (Battery operation) Motor	20
29	Electronics Development	Node MCU  <small>6 x Node MCU</small>	ESP 8266 I2C, 1 wire, plug and play	3
30	Electronics Development	WeMos D1 R2  <small>8 x WeMos D1 R2</small>	WeMos D1 R2 with WiFi ESP 8266 Operating Voltage: 5V	3
31	Electronics Development	Vibrating Motor  <small>20 x Vibrating Motor</small>	Weight: 10 Grams Operating Voltage: 1.5 to 3V	10
32	Electronics Development	Alligator Connectors  <small>200 x Alligator Clips</small>	Multi-Colour Alligator Connectors - 12 inch	100
33	Electronics Development	Battery clips with DC Jack  <small>40 x Battery Clip with DC Jack</small>	9-volt battery clips with DC Jack	20
34	Electronics Development	Hook-up Wires	Red & Black set 100 Meters each	2



SER NO	CATEGORY	NAME	SPECIFICATION	SUGGESTED QUANTITY
35	Electronics Development	Jumper Cable  500 x Jumper Cable Male-Female  1000 x Jumper Cable Male-Male	Male-Male	500
			Male-Female	300
			Female-Female	200
36	Electronics Development	RGB LEDs  40 x RGB LED	Regular 5mm 3-5 volt Range	200
37	Electronics Development	LEDs (Red)  1000 x Red, Green, Blue, Yellow, White LEDs	Regular 5mm 3-5 volt Range	500
38	Electronics Development	LEDs (Green)  1000 x Red, Green, Blue, Yellow, White LEDs	Regular 5mm 3-5 volt Range	500
39	Electronics Development	LEDs (Blue)  1000 x Red, Green, Blue, Yellow, White LEDs	Regular 5mm 3-5 volt Range	500
40	Electronics Development	LEDs (Yellow)  1000 x Red, Green, Blue, Yellow, White LEDs	Regular 5mm 3-5 volt Range	500
41	Electronics Development	LEDs (White)  1000 x Red, Green, Blue, Yellow, White LEDs	Regular 5mm 3-5 volt Range	500
42	Electronics Development	Timer IC -LM 555  30 x 555 Timer IC	LM 555 Timer IC.	15
			Voltage range - 4.5V to 16V	



43	Electronics Development	Atmega16u2  10 x Atmega 16u2 IC	8 bit microcontroller Individual IC (DIP). Voltage range: 2.7V to 5.5V. Operational Range: -40°C to +80°C	5
44	Electronics Development	diodes and transistors kit  3 x Set of 25 Diode and Transistors	One Kit Contains - 25 Assorted Basic Diodes of 4 different types each. Types: NPN Transistor -2N3904, BC547 PNP Transistor - 2N3906, BC557 Silicon Diode - 1N4148, Power Diode - 1N4004/4001. Equivalent or better. Wattage: 1W, Current rating: 1A Assorted kit packaged together and labelled.	2
45	Electronics Development	button switch set  3 x Set of 100 Button Switch Push, Toggle, Rotary, Selector and Slide Switch	One Kit Contains - 100 buttons of different types. Types: Push, toggle, rotary, selector and slide switch. Assorted kit packaged together and labelled.	2
46	Electronics Development	capacitive touch module  20 x Capacitive Touch Switch (MPR121) Module	MPR 121 with I2C. Voltage Range: 2.5V to 3.6V DC.	10
47	Electronics Development	capacitive touch switch module  10 x Capacitive Touch Switch	Digital Capacitive touch switch module - TTP223B Voltage Range: 2V to 5V DC.	5

