



TECHNICAL EVALUATION REPORT FOR PROCUREMENT OF PHYSICS LAB ITEMS FOR 2020-21: 25/2020-21

The tender opening was held on 25/05/2021 for PHYSICS Laboratory Material. Three (03) bidders participated in tendering process. The names of the bidders/firms are as under;

1. Wahid Scientific Store
2. Sentron Asia international
3. Pakistan Analytics Supply

Report is as under:

Sr #	Name of Item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
1	Acceptor Circuit	6	Acceptor circuit app (LRC) fitted with components, A.C Micro-ammeter Pak with diagram on box for 220volts Warranty: 1 year Make Pak	Acceptor circuit app (LRC) fitted with components, A.C Micro ammeter Pak with diagram on box for 220volts Warranty: 1 year Pak Made	Acceptor circuit app (LRC) fitted with components, A.C Micro-ammeter Pak with diagram on box for 220volts Pak Made	1 Wahid Scientific Store 2 Sentron Asia international 3 Pakistan Analytics Supply	
2	Ammeter, Voltmeter	15	Ammeter Dc Moving coil 0-0.6 amp and 0-3 amp dual Range Voltmeter Dc dual range bench type 0-3/0-15volt Make China	Not quoted	Ammeter Dc Moving coil 0-0.6 amp and 0-3 amp dual Range original made china. Voltmeter Dc dual range bench type 0-3/0-15 volt Original made in china.	1 Wahid Scientific Store 2 Pakistan Analytics Supply	
3	Astable Multivibrator Circuit	5	Astable Multivibrator Circuit Make China	Astable Multivibrator Circuit Pak Pak Made	Astable Multivibrator Circuit Pak	1 Wahid Scientific Store 2 Sentron Asia international 3 Pakistan Analytics Supply	
4	Ballistic Galvanometer	6	Ballistic galvanometer "E.dspot" in bakelite case built in scale 150mm into 100 division resistance 100 ohms sensitivity 4 to 5 microamp per 75mm for 220volt Make Pak	Not quoted	Ballistic galvanometer "E.dspot" in bakelite case built in scale 150mm into 100 division resistance 100 ohms sensitivity 4 to 5 microamp per 75mm for 220volt English type Pakistan.	1 Wahid Scientific Store 2 Pakistan Analytics Supply	
5	Bread Board	50	Bread Board Make China	Bread Board (Size)	Bread Board China	1 Wahid Scientific Store	

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				166 mm X 54 mm China		2.Sentron Asia international 3.Pakistan Analytics Supply
6	Bridge Rectifier	5	Half wave and full wave rectifier app. Combined in a box with circuit diagram Make Pak	Half wave and full wave rectifier app. Combined in a box with circuit diagram Pak make	Half wave and full wave rectifier app. Combined in a box with circuit diagram Pak Made	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply
7	Burglar Alarm Circuit	5	Burglar Alarm Circuit Make Pak	Not quoted	Burglar Alarm apparatus small to stu logic Gate, NAND for Burglar alarm fitted two keys, two resistances buzzer and LED in 7"x5" box with connecti and diagram without power supply complete Pak Made	1.Wahid Scientific Store 2.Pakistan Analytics Supply
8	potentiometer	1	N/Q	N/Q	Potentiometer 4 wires red wood base terminals with Jockey superior Pak	1. Pakistan Analytics Supply
9	Carey Foster Bridge	5	Carey Foster Bridge 4 gaps brass nickled strips on red wood base brass terminal with jockey Pak Made	Not quoted	Carey Foster Bridge 4 gaps brass nickled strips on wood base brass terminal with jockey Make Pak	1.Wahid Scientific Store 2.Pakistan Analytics Supply

10	Combinational Logic De-Multiplexer circuit Pak Made	5	Combinational Logic Multiplexer circuit Make Pak	Combinational Logic	Combinational Logic De-Multiplexer circuit	1.Wahid Scientific Store
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			3 Pakistan Analytics Supply			
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Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
11	Combinational Logic Multiplexer Circuit	5	Combinational Logic Multiplexer circuit Make Pak	Combinational Logic Multiplexer circuit Pak Made	Combinational Logic Multiplexer circuit Pak Made	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply	
12	D latch and Flip Flop Circuit	5	D latch and Flip Flop Circuit Make Pak	Not quoted	D latch and Flip Flop Circuit Pak Made	1.Wahid Scientific Store 2.Pakistan Analytics Supply	
13	D/A Conversion Circuit	5	D/A Conversion Circuit Make Pak	D/A Conversion Circuit Pak Made	D/A Conversion Circuit Pak Made	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply	
14	Digital Logic Trainer	5	Digital Logic Trainer Make Pak	Not quoted	Digital Logic Trainer Pak Made	1.Wahid Scientific Store 2.Pakistan Analytics Supply	
15	Digital Multimeter	5	DC Voltage Range (600mv-1000v) DC Current Range (60uA-20A) AC voltage Range (6-650v) AC Current Range (6mA-20A) Capacitance (9.99nF-99.9mF) Resistance (0-60Mohm) Frequency • Continuity , REL ,Data Hold ,LCD Backlight • Low Battery Indication • Auto Power Off Around 15 minutes Make China	Model: UT55 DC Voltage (V): 200mV/2V/20V/200V/1000V ±(0.5%+1) DC Current (A): 2mA/20mA/200mA/20A ±(0.8%+1) AC Voltage (V): 2V/20V/200V/750V ±(0.8%+3) AC Current (A): 20mA/200mA/20A ±(1%+3) Resistance (Ω): 2kHz/20kHz ±(1.5%+5) Temperature (°C): -20 Hong Kong	DC Voltage Range (600mv- 1000v), Current Range (60uA-20A) AC voltage Range (6-650v), AC Current Range (6mA-20A) Capacitance (9.99nF-99.9mF) Resistance (0-60Mohm) Frequency • Continuity • REL • Data Hold • LCD Backlight • Low Battery Indication • Auto Power Off Around minutes Model UT-51 UNI-T China	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply	

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7-9-21

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7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
16	Digital Oscilloscope	6	25 MHz bandwidth selections 2ch input 250MS/s maximum samplin rate 10M maximum memory depth for each channel 7" 800 x 480 WVGA LCD display 256 color gradient display function to strengthen waveform performance 1Mpts FFT frequency Make China	Bandwidth 25MHz Channels 2 Sampling rate 250MS/s Rise time 2, 000wfms/s Vertical scale (V/div) 1mV/div~20V/div Time base scale (s/div) 10ns/div~50s/div Storage methods Setup, waveform, bitmap Hongkong	25 MHz band width selections, • 2ch input • 250MS/s maximum sampling rate • 10M maximum memory depth for each channel • 7" 800 x 480 WVGA LCD display • 256 colour gradient displ function to strengthen waveform performance Model UTD-2025CL UNI-T China	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply	
17	Drawer Boxes for Electronic Components		Drawer Boxes For Electronic Componets Make Pak	Not quoted	Drawer Boxes for Electronic Components Pak Made	1. Wahid Scientific Store 2.Pakistan Analytics Supply	
18	Four Digit Decade Counter Circuit	5	Four Digit Decade Counter Circuit Make Pak	Not quoted	Four Digit Decade Counter Circuit Pak Made	1. Wahid Scientific Store 2.Pakistan Analytics Supply	
19	IC's For Logic Gates	30	IC's For Logic Gates Make Pak	Not quoted	IC's For Logic Gates Pak Made	1. Wahid Scientific Store 2.Pakistan Analytics Supply	
20	Ionization potential of mercury apparatus	2	Ionization potential of mercury apparatus complete with mercury tube built in power supply fitted voltmeter and microammeter for 220volts complete apparatus Make Pak	Ionization potential of mercury apparatus complete with mercury tube built in power supply fitted voltmeter and micrometer for 220 volts complete apparatus Pak Made	Ionization potential of mercury app. complete with Mercury tube built in power supply fitted voltmeter and microammeter for 220volts complete apparatus. Pak Made	1.Wahid Scientific Store 2.Sentron Asia international 3.Pakistan Analytics Supply	
21	J-K Flip Flop Circuit	2	J-K Flip Flop Circuit Make Pak	Not quoted	J-K Flip Flop Circuit Make Pak	1. Wahid Scientific Store 2.Pakistan Analytics Supply	

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7-9-21

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7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
22	LDR Not Gate Circuit	5	LDR Not Gate Circuit Make Pak	Not quoted	LDR Not Gate Circuit Make Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
23	Logic Probe	5	Logic Probe Make Pak	Not quoted	Logic Probe Make Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
24	MSI Adder Circuit	5	MSI Adder Circuit Make Pak	Not quoted	MSI Adder Circuit Make Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
25	Mutual Inductance Circuit	5	Mutual Inductance Circuit Make Pak	Not quoted	Mutual Inductance Circuit Make Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
26	One Shot Multivibrator circuit	5	One Shot Multivibrator circuit Make China	Not quoted	One Shot Multivibrator circuit Make China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
27	Power Supply	8	"Specification: • 3 Independent Isolated outputs, 0-30V, 0-5A (X2), Four 3-Digits LED Displays, Over Load and Reverse Polarity Protection, Mode Digital meter: 3 Digits 0.5" LED Display Make China "	Not quoted	Specification: • 3 Independent Isolated outputs, 0-30V, 0-5A (X2), Four 3-Digits LED Displays, Over Load and Reverse Polarity Protection, Tracking Operation and Auto Series/Parallel Operation • Linear / Switching Mode: Linear Mode • Digital meter: 3 Digits 0.5" LED Display, China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
28	Rejecter Circuit	06	Rejecter circuit app fitted with components, AC Microammeter and Circuit diagram on box for 220Volts Make Pak	Rejecter circuit app fitted with components, AC Micro ammeter and Circuit diagram on box for 220Volts Pak Made	Rejecter circuit app fitted with components, AC Micro ammeter and Circuit diagram on box for 220Volts.	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	

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7-9-21

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7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
29	Self-Inductance Circuit	5	Self-Inductance Circuit Make Pak	Not quoted	Self-Inductance Coil on wooden box.	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
30	Shift Register Counter Circuit	5	Shift Register Counter Circuit Make Pak	Not quoted	Shift Register Counter Circuit Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
31	Signal Generator	10	Analog Channel: 1• Frequency Range: 0.1Hz ~12MHz• Sample Rate: 20 MSa/s• Vertical Resolution: 10-bit• Memory Length: 4k points• Sine, Square, Triangular, Noise and Arbitrary Waveform• 1% ~ 99% adjustable dutycycle for SquareWaveform• Make China	Signal Generator Dual Channel DDS Function arbitrary waveform signal generator pulse signal source frequency counter Numerical control 20MHz. VCO Frequency Sweeper China	Audio Generator wide frequency ranges from 10Hz-1MHZ Operated on 220volts Made in China.	1. Wahid Scientific Store 2. Sentron Asia international	Pakistan analytical supply is disqualified due to difference in frequency range and model is not mentioned.
32	Synchronous Counter Circuit	5	Synchronous Counter Circuit Make China	Not quoted	Synchronous Counter Circuit Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
33	Thermistors and LDRs (Variety of NTC, PTC and LDR)	10	Thermistors and LDRs (Variety of NTC, PTC and LDR) Make China	Not quoted	Thermistors and LDR, Variety of NTC, PTC and LDR) Pak Made. Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
34	Transistor oscillators Circuit	5	Transistor as oscillator app. with circuit diagram in box Make China	Not quoted	Transistor as oscillator app. with circuit diagram in box Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
35	Triac Circuit	5	Triac Circuit Make China	Not quoted	Triac Circuit Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
36	Two Digit Up Down Counter	5	Two Digit Up Down Counter Make China	Not quoted	Two Digit Up Down Counter Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	

Syeda Rabia Ejaz
7-9-21


7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
37	Variety of Capacitors	15	(15 Packets of Different value of Standard Capacitor) Make China	Not quoted	Variety of Capacitors (15 Packets of Different value of Standard Capacitor) China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
38	Variety of different Transistor and general-purpose Ics	10	(10 Packets of Different Transistor and Ics) Make China	Not quoted	Variety of different Transistor and general-purpose Ics (10 Packets of Different Transistor and Ics) China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
39	Variety of Inductors	10	(10 Packets of Different value of Standard Inductors) Make Pak	Not quoted	Variety of Inductors (10 Packets of Different value of Standard Inductors) China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
40	Variety of Resistors	50	50 Packets of different value of Standard Resistor) Make Pak	Not quoted	Variety of Resistors (50 Packets of different value of Standard Resistor) China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
41	Variety of Si. Ge, Zener and LED Diode	100	(Different color LEDs and Strips of General Purpose Diodes) Make Pak	Not quoted	Variety of Si, Ge, Zener and LED Diode China	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
42	Galvanometer	6	Galvanometer dual range (30-0-30) bench type original Make Pak	Not quoted	Galvanometer dual range (30-0-30) bench type original Made in china.	1. Wahid Scientific Store 2. Pakistan Analytics Supply	
43	Geiger-Muller Counter Apparatus	1	Operated on high voltage 200 to 500 Volts variable for GM counting continuously working. The count rate is 0-9999 counts per second. Complete with GM tube MX-168 (ZP-1481) with holder and cable connected through BNC connector. Above system essentially required the following accessories: Absorber Set of 24 pieces, 1 tissue paper, in plastic, 16 Aluminium pieces 4-890mg, 07-7.6cm. 07 lead pieces 18-Make Pak	Geiger-Muller Counter Apparatus Model : XKS-302-010F Operated on high voltage 200 to 500 Volts variable for GM counting continuously working. The count rate is 0-9999 counts per second. Complete with GM tube MX-168 (ZP-1481) with cable connected through BNC connector Made : Griffen & George England	G.M. tube with Holder & Lead IPC Made in England with Timer Scaler and Frequency Meter digital microprocessor controlled Multipurpose Instrument for Physics Laboratory combining the Functions of Ratemeter, Frequency Meter and a timer built in EHT supply continuously variable over the range 300 to 500 volts Cat No IPC-3342-T IPC Made in England.	1. Wahid Scientific Store 2. Sentron Asia international	Pakistan Analytical supply is disqualified due to difference in voltage range. That is 300-500 Volts.

Syeda Robia Ejaz
7-9-21


7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
44	Dielectric constant measuring apparatus R.F. Generator (Range : 9-10MHz appr.). Micro ammeter (Range : 0-50mA).High	1	1. Aluminium parallel platesize 25cmx25cm 2nos 2. Inductance mounted in box, 735mH 1No. 3. Plastic plate 1"x1" 1No. 4. Spacers set 1No. 5. AC meter 0-20mA benchtype china 1No. 6. Connecting wire pair 1/2meter with crocodile 4Nos. 7. Wooden support 1No. 8. Glass Plate 10"x10" Pak 9. Audio Generator wide frequency ranges from 10Hz-1MHZ operated on 220volts Made in China	Brass parallel plates size 25cmx25cm 2nos Inductance mounted in box, 735mH 1No. Plastic plate 1"x1" 1No. Spacers set 1No. AC meter 0-20mA bench type 1No. Connecting wire pair 1/2meter with crocodile 4Nos. Wooden support 1No. Glass Plate 10"x10" Pak Audio Generator (China) wide frequency ranges from 10Hz- 1MHZ operated on 220volts Pak Made	Dielectric constant measuring apparatus R.F. Generator (Range: 9-10MHz approx.). Micro ammeter (Range: 0-50mA).High 1. Aluminium parallel plates size 25cmx25cm 2nos 2. Inductance mounted in box, 735mH 1No. 3. Plastic plate 1"x1" 1No. 4. Spacers set 1No. 5. AC meter 0-20mA bench type china 1No. 6. Connecting wire pair 1/2meter with crocodile 4Nos. 7. Wooden support 1No. 8. Glass Plate 10"x10" Pak 9. Audio Generator wide frequency ranges from 10Hz- 1MHZ Operated on 220volts Made in Pak	1. Wahid Scientific Store 2. Pakistan Analytics Supply	1. Sentron Asia international is disqualified due to Brass plates quoted. Required plates are of Aluminum plates..
45	Speed of light apparatus using laser and mirror with u/s scope	1	Not quoted	To determine the speed of light in air. Through reflecting mirror, In mount case, and convex lense	Not quoted	1. Sentron Asia international	

Syeda Rabia Ejaz
7-9-21

(Signature)
7-9-21

Sr #	Name of Item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
47	Millikan-oil drop apparatus (Complete)	1	Technical Specification: - Rated voltage: AC220V - Rated frequency: 50Hz - Rated output power: 5W - DC operating voltage between upper And lower polar plates: 0 ~ 450V - Distance between polar plates: 5±0.2mm - Total magnification of measuring Microscope: 30X - Linear field of vision: ≥3mm - Total division of division scale: 2±0.01mm - Resolution of objective lens: 100 lines / mm Make Pak	Technical Specification: Rated voltage: AC220V Rated frequency: 50Hz Rated output power: 5W DC operating voltage between upper And lower polar plates: 0 ~ 450V Distance between polar plates: 5±0.2mm Total magnification of measuring Microscope: 30X Linear field of vision: ≥3mm Total division of division scale: 2±0.01mm Resolution of objective lens: 100 lines / mm China	Technical Specification: - Rated voltage: AC220V - Rated frequency: 50Hz - Rated output power: 5W - DC operating voltage between upper And lower polar plates: 0 ~ 450V - Distance between polar plates: 5±0.2mm - Total magnification of measuring Microscope: 30X - Linear field of vision: ≥3mm - Total division of division scale: 2±0.01mm - Resolution of objective lens: 100 lines / mm Complete unit, Made in China.	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	
48	E/M measurement of Electron Apparatus	1	Acceleration electrode voltage: 0-250V continuously adjustable Error of the voltmeter on panel ≤0.25% - Magnetizing current: Current range 0-0.25A continuously adjustable Error of the ammeter on panel ≤0.25% Current direction 3 ways Clockwise, off, anticlockwise - Deflection plate voltage: Voltage range 50V ~ 250V Continuously adjustable Voltage direction 3 ways Positive in up-plate, off, positive in down-plate Complete unit, Make China	Acceleration electrode voltage: 0-250V continuously adjustable Error of the voltmeter on panel ≤0.25% Magnetizing current: Current range 0-0.25A continuously adjustable Error of the ammeter on panel ≤0.25% Current direction 3 ways Clockwise, off, anticlockwise Deflection plate voltage: Voltage range 50V ~ 250V Continuously adjustable Voltage direction 3 ways Positive in up-plate, off, positive in down-plate China	E/M Lorentz Force apparatus The Lorentz force demonstrator is useful for testing the Electron charge mass ratio - The Lorentz force exerted by magnetic field on moving electrons and deflection of moving Electrons within an electric field. Technical Specification: -Acceleration electrode voltage: 0-250V continuously adjustable Error of the voltmeter on panel ≤0.25%. Magnetizing current: Current range 0-0.25A continuously adjustable. Error of the ammeter on panel ≤0.25%. Current direction 3 ways Clockwise, off, anticlockwise, Deflection plate voltage: Voltage range 50V ~ 250V. Continuously adjustable. Voltage direction 3 ways. Positive in up-plate, off, positive in down-plate. Complete unit, Made in China.	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan analytical supply	
49	Neon Flash bulb and Condenser	05	Neon lamp app.in box built in Mega ohms resistance 10 valves and capacitors etc. For 220 volts with circuit diagram complete in all respects Make Pak	Neon lamp app.in box built in Mega ohms resistance 10 valves and capacitors etc for 220 volts with circuit diagram complete in all respects Pak Made	Neon lamp app.in box built in Mega ohms resistance 10 valves and capacitors etc. for 220volts with circuit diagram complete in all respects Pak Made	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	

Syeda Rubia Ejaz
7-9-21

Signature
7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
50	BH Curve Measurement circuit	1	To study BH, Permeability Hysteresis Curve. Magnatic field, flux & ,induction. Including U&I Core Coil 300turn, Data logger ,Voltage & Current sensor, power supply & Software Complete apparatus (But with Computer / Make Pak	To study BH, Permeability Hysteresis Curve. Magnatic field, flux & ,induction. Including U&I Core Coil 300turn, Data logger ,Voltage & Current sensor, power supply & Software (Designed Software By Indosaw) Complete apparatus (But with Computer Core i-3 Made : Sargent Welch USA	B-H Curve Apparatus for Degree Classes complete iron ring Toroid Coil and Power Supply etc Pak Made With Oscilloscope China	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	
51	Solar cell characteristics apparatus	2	Not quoted	Solar cell characteristics apparatus combined Made : IOCAL Made	Solar cell characteristics apparatus Combined Pak Made	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	
52	Hall effect apparatus	1	Range : 0 -2 Kilo Gauss at 0 -20 Kilo Gauss. Resolution : 1, Gauss at 0 -2 Kilo Gauss Range. Accuracy : 0.5%. Display : 3 ½ Digit, 7 segment LED DPM. Power : 220 Volt, 10%, 50 Hz. Transducer : Hall Probe with an imported Hall Element. Make Pak	Specifications: Outputs for equivalent voltages: 4-mm safety sockets 8-pin miniDIN sockets (3BNETlog compatible) Power supply: 12 V AC, 3 A via 4-mm sockets Dimensions: 180x110x50 mm ³ approx. Weight: 0,5 kg approx. Made : 3B Germany	Dc stabilized current supply: Range 0-500mA Digital display resolution 1mA -Four-half-bit digital voltmeter: Range 0-2V, resolution 0.1mV -Digital tesla meter: Range 0-0, 35T, resolution 0.0001 Complete unit as above, Made in China.	1. Wahid Scientific Store 2. Sentron Asia international 3. Pakistan Analytics Supply	
53	Ionization potential of mercury apparatus	1	Ionization potential of mercury app. complete with mercury tube built in power supply fitted voltmeter and micro ammeter for 220volts complete apparatus Make Pak	Not quoted	Ionization potential of mercury app. complete with Mercury tube built in power supply fitted voltmeter and microammeter for 220volts complete apparatus. Pak Made	1. Wahid Scientific Store 2. Pakistan Analytics Supply	

Syeda Rabia Ejaz
7-9-21

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Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
54	Reflection, Transmission and Refraction of Microwaves Polarization of Microwaves Propagation of Microwaves(Inverse Square Law	1	Not Quoted	Not quoted	Not quoted		Re-tender of equipment is recommended
55	Hot plates with magnetic stirrer magnetic bar=1 weight balance = 1, Iron Nitrate (Hydrated), Rare earth (Nd, Ho,Dy,Er)= 20 gram	3	1 I.Magnetic bar 2. weight balance Electronics analytical balance Digital microprocessor controlled.Technical specification:Weight capacity:220gm Minimum display:0.1mg Pan size(mm): Ø91 approx Chemicals (Sigma Aldrich , 99.99%)= 25 gmeach 1. Iron nitrate nano hydrate Fe(NO3)3.9H2O Dysprosium nitrate hexa hydrate N3DyO9.6H2O 3. Ho(NO3)3.5H2O 4. Erbium tri nitrate penta hydrate Er(NO3)2.5H2O Make China	Not quoted	Magnetic Stirrer With Ceramic Type Hotplate (Digital) Economical Heat only, stir only or heat and stir together Easy to read LED display, with independent stir display Electronic speed control for constant speed during changes in load Hot warning sign if temperature is above 50°C Technical specification Temp range: 25 - 280°C Speed range: 100-1500rpm Temp incrementure: 1°C Stirring capacity: 3L Plate diameter:5.3" With PT1000 Sensor & PT1000 Sensor Support .Stand & Clamp Model MS-H 280 DLab, USA Country of Origin: China b. Magnetic bar 25mm Chinac.Electronic Analytical Balance with Latest UniBlock Technology and digital display, UniBlock designs permits a consistency	1. Wahid Scientific Store 2.Pakistan Analytics Supply	

Syeda Rabia Ejaz
7-9-21

(Signature)
7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
					<p>of production that assures reliability & long operational life. Automated calibration can be started by pressing keys. UniBlock designs replaces 70 parts of Electromagnetic balances and ensures stable results. Technical Specification: Weighting Capacity:220gm Minimum display:0.1mg Pan size (mm): 091 approx. Features: Calibration by pressing keys w external calibration weight. Easy setting, expanded piece counting function, comparator function, formulation modes.Windows direct communication function send balance data to excel without any d software with optional RS23 interface.Complete unit, operated on 220V Model ATY-224 Shimadzu, Japan. d.Chemicals (Sigma Aldrich 99.99%)</p> <p>i. Iron nitrate nano hydrate $Fe(NO_3)_3 \cdot 9H_2O = 500$ gram</p> <p>ii. Dysprosium nitrate hexa hydrate $N_3DyO_9 \cdot 6H_2O = 25$ gram</p> <p>iii. $Ho(NO_3)_3 \cdot 5H_2O = 25$ gram</p> <p>iv. Erbium tri nitrate penta hydrate $Er(NO_3)_3 \cdot 5H_2O = 25$ gram Complete set</p>		

Syeda Rabia Ejaz
7-9-21

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Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
56	Magnetic stirrer	3	Digital Microprocessor PID Control. Temp range: Ambient - 550°C. Speed range: 100 - 1500rpm. Temp accuracy at plate: ±1 at 100C. Temp control: accuracy of liquid using PT- 1000 Sensor ±0.2°C. Temp increments: 1°C. size: 7 x 7". Plate material: Ceramic-Glass Make China	Not quoted	<p><u>Magnetic Stirrer</u> <u>With Ceramic Type Hotplate</u> <u>(Digital) Economical</u></p> <p>Features: Heat only, stir only or heat and stir together functions Easy to read LED display, with independent heat and stir display Electronic speed control for constant speed even during changes in load Hot warning sign if temperature is above 50°C</p> <p>Technical specification Temp range :25 - 280°C Speed range :100-1500rpm Temp increments :1°C Stirring capacity :3L Plate diameter :5.3"</p> <p>With PT1000 Sensor & PT1000 Sensor Support Stand & Clamp Model MS-H 280 DLab, USA Country of Origin: China</p> <p>Terms:- For Pakistan Analytics Supply</p>	1.Wahid Scientific Store	Pakistan Analytical Supply disqualified due to temperature range Because the quoted temperature range is 280°C while required was 550°C.
57	Temperature dependent IV measuring apparatus	1	Not quoted	Not quoted	Not quoted	NA	
58	Dielectric measuring instrument Frequency Range	1	Multistep and Sweep mode Including FX000C19 Text Fixture. Model: 6632-5G Features: >Frequency range: DC, 10Hz-	Not quoted	Not quoted		Disqualified Wahid Scientific Store because the required

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7-9-21

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7/9/2021

Sr #	Name of item	Qty	Wahid Scientific Store	Sentron Asia International	Pakistan Analytics Supply	Technically Qualified	Technically Disqualified
	1MHz-50 GZ		5MHz resistance 25Ω/100Ω, switchable Make TAIWAN				apparatus must operate in 1MHz-50 GZ .
59	Megnetron Sputtering Unit		Features ✓ Semi/fully-automatic control ✓ Low voltage sputtering ✓ High resolution fine coating (order of 2nm Gold grain) ✓ 170 mm diameter Borosilicate chamber ✓ 0-100 mA switching power supply ✓ Quartz crystal thickness monitor with precision of 1nm ✓ Film thickness monitor ✓ Electrical control shutter ✓ Automatic venting valve ✓ Sample tilt with rotation ✓ Planetary sample rotation (optional) ✓ Thermocouple vacuum gauge Make Vac Coat UK (2 Year Warranty)	Not quoted	Not quoted		Disqualified Wahid Scientific Store due to specifications such as Stainless steel chamber -400 mm diameter, 2' substrate diameter with rotation , up to 4 x2 sputtering sources , dc pulse source power supply, turbo pumping pressure control are not included in quotation.
60	Microscope, Field Emission Pro (FESEM)	1	Not quoted	Not quoted	Not quoted		Re-tender of equipment is recommended

Technical Evaluation & Inspection committee for Physics Items

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Dr. Ambreen kalsoom
Convener

(Signature)
Dr. Syeda Rabia Ejaz
Member

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Dr. Sadia Malik
Secretary