

COLLEGE OF HEALTH SCIENCES

University of Liberia

Monrovia, Liberia

Cell Phones: 0770000333 / 0777524513 / 0886 524513

Email : ulchs@ul.edu.lr

REQUEST FOR QUOTATION

PROJECT No.: PEER NAS

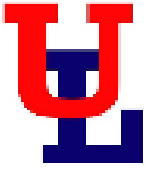
THE SUPPLY OF LABORATORY EQUIPMENT AND REAGENTS

1. The University of Liberia College of health Sciences through the Office of Fiduciary Services (ULCHS-OFS) receive a grant from the USAID/PEER/NAS towards Strengthening medical training and build specialty and subspecialty medical capacity of Liberia's next generation of medical doctors. The ULCHS-OFS intends to apply part of the grants to payments under the Contract for refurbishing of three laboratories (Chemistry, Physics, & Biology) at university of Liberia Fendell Campus and one at ULCHS Medical School.
2. The University of Liberia College of Health Sciences (ULCHS) is hereby soliciting quotations from eligible and interested vendors to Supply Assorted Laboratory Equipment and Reagents. The Goods are to be quoted with the below details and subsequently supplied and installed. All Goods must be in a good condition and must amount to the absolute value for Donor's money. Only prices within acceptable range for standardized and quality Goods will be considered.

NO.	RFQ REFERENCE NO.	DESCRIPTION
1	RFQ-ULCHS/OFS/2023/021	Supply Assorted Laboratory Equipment- Lot 1
2	RFQ-ULCHS/OFS/2023/022	Supply of Assorted Chemical & Reagent- Lot -2

All quotes required by this RFQ must be received by mail to: Through hard copy delivered at the Administrative Building, University of Liberia College Health Sciences-Office of Fiduciary Services, AM Diglotti Campus, Congo Town, NOT LATER THAN **April 18, 2023, at the hour of 1:00 P.M local time.** Electronic bidding **WILL NOT BE PERMITTED.** Late bids will be **rejected.**

Questions: Questions regarding the technical or administrative requirements of this RFQ may be submitted no later than **Thursday, April 6, 2023, @ 3:00pm** local time to ulchsof@ul.edu.lr . Questions must be submitted in writing; phone calls will not be accepted. Questions and requests for clarification—and the responses thereto—that ULCHS-OFS believes may be of interest to other offerors will be circulated to all RFQ recipients who have indicated an interest in bidding. Only the written answers issued by ULCHS-OFS will be considered official and carry weight in the RFQ process and subsequent evaluation. Any verbal information received from employees of ULCHS or any other entity should not be considered as an official response to any questions regarding this RFQ.



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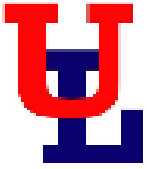
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Technical Requirements: The table attached contains the technical requirements of the commodities. Offerors are requested to provide quotations containing the information attached on official letterhead or official quotation format. Offerors can submit offers for all items, or a sub-set of the items, though preference will be given to offerors who can address the larger number of items.

ANNEX 1: INSTRUCTION TO BIDDERS

1. You shall submit for quotation both Lots or submit for only one Lot. Your quotation must be typed or written in indelible ink and shall be signed by you or your authorized representative. Without a signature in your Form of Quotation, your quotation will not be considered further.
2. In evaluating the quotations, the Employer will adjust for any arithmetical errors as follows:
 - (a) where a discrepancy between amounts in figures and in words, the amount in words will govern;
 - (b) where a discrepancy between the total price in the Priced Activity Schedule (or Bill of Quantities) or the quoted amount indicated in the Form of Quotation, the total price in the Priced Activity Schedule (or Bill of Quantities) shall govern;
 - (c) where a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern; and
 - (d) if you refuse to accept the correction, your quotation will be rejected.
3. Your quotation shall be valid for a period of thirty (30) days from 18th April 2023 (deadline for submission of the quotation).
4. Your quotation in duplicate and written in the English language shall be for the whole works and based on the Priced Activity Schedule based on the "unit and total price indicated in the filled-in Bill of Quantities". Currency of quoted prices and payment shall be United States Dollars (USD). The quotation shall include all duties, local taxes and other levies payable by the contractor in accordance with the local laws. In case of any discrepancy between the original and duplicate, the original shall prevail.
5. The Employer will award the contract to the Contractor whose quotation has been determined to be substantially responsive to this Request for Quotation and who has offered the lowest evaluated price quotation. A quotation is not substantially responsive if it contains material deviations or reservations to the terms, conditions, and specifications in this Request for Quotation, and it will not be considered further. The Employer will evaluate and compare only the quotations determined to be substantially responsive.
6. If you withdraw your quotation during the validity period and/or refuse to accept the award of a contract when and if awarded, then you will be excluded from the ULCHS/OFS list of contractors for two years.
7. The contract will be governed by the terms and conditions of Contract.
8. Your quotation including Form of Quotation and filled-in Section 2 "Priced Activity Schedule (or alternatively Statement of works)" should be submitted by **April 18, 2023, at the hour of 1:00 P.M** local time. at the University of Liberia College of Health Sciences.



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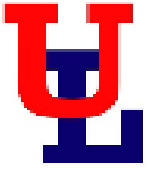
9. The bidder whose quotation has been accepted will be notified of the award of contract through the Letter of Acceptance issued by the Employer within 15 days from the date of submission of quotation.
10. Any commodities offered in response to this RFQ must be new and unused. In addition, all electrical commodities must operate on 240V/50Hz.
11. Please note that, unless otherwise indicated, any stated brand names or models are for illustrative description only. An equivalent substitute, as determined by the specifications, is acceptable.
12. Under USAID/Government of Liberia Anticorruption Policy bidders shall observe the highest standard of ethics during the procurement and execution of such contracts. The ULCHS will reject a proposal for award, and will impose sanctions on parties involved, if it determines that the bidder recommended for award or any other party, has engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, the Contract. At the time of submission of your quotation, you should not be in USAID or Government of Liberia Debarment/Sanctions list.

Sincerely,

University of Liberia

College of Health Sciences

Office of Fiduciary Services



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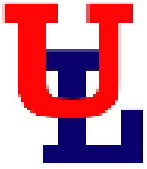
ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder's Declaration, sign it and return it as part of their quotation along with Annex 4: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Quotations in response to this RFQ must be priced on a fixed-price, all-inclusive basis, including delivery, installation, and all other costs. Pricing must be presented in United States Dollars. Offers must remain valid for not less than 60 calendar days after the offer deadline. Offerors are requested to provide quotations on official letterhead in the format provided in **Section 4** – Technical Requirements. Any commodities offered in response to this RFQ must be new and unused. In addition, all electrical commodities must operate on 240V/50Hz. Please note that, unless otherwise indicated, any stated brand names or models are for illustrative description only. An equivalent substitute, as determined by the specifications, is acceptable. **Place of Delivery shall be the University of Liberia Fendell Campus Laboratories.**

In addition, offerors in Liberia responding to this RFQ are requested to submit requested GOL documentation indicated in this document. Failure to these documents indicated a by vendors based in Liberia would lead to disqualification of an offer from consideration as ULCHS-OFS will do business only with vendors that have satisfied Government of Liberia (GOL) requirements.

NO	ITEM	DETAILS
	Legal Name of Bidder	
	Legal Address	
	Website	
	Year of Registration	
	Business Registration (provide copy of the Valid Certificate)	



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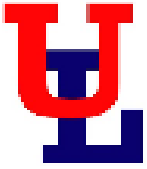
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	Tax Clearance (provide copy of the Valid Certificate)	
	Does your Company have a written statement of its Environmental Policy?	
	Is your company a member of the PPCC Vendors List? Please provide copy	
	Delivery time (after receipt of order): calendar days	
	Length of warranty on offered equipment: years	
	References: provide the names and contact information of at least 3 organizations with whom you have conducted Similar Supply: (Copy of Contract, Purchase Order etc.)	
	Location of service center(s) for after-sales service, including warranty repair:	
	Bank Information	Bank Name: Bank Address: IBAN: SWIFT: Account Number:



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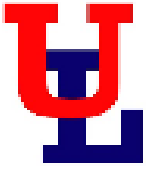
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ANNEX 3: BIDDERS DECLARATION

YES	NO	DESCRIPTION
		Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them.
		I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period.
		Ethics: In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ; has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer.
		I/We confirm to undertake not to engage in proscribed practices, or any other unethical practice, with the GOL/USAID or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the GOL/USAID and we acknowledge that it provides the minimum standards expected of suppliers to the UN.
		Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organization's Point of Contact.
		Prohibitions, Sanctions: I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by the GOL/USAID, and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization.



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YES	NO	DESCRIPTION
		Bankruptcy: I/We have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future.
		Offer Validity Period: I/We confirm that this Quote, including the price, remains open for acceptance for the Offer Validity.
		I/We understand and recognize that you are not bound to accept any Quotation you receive, and we certify that the goods offered in our Quotation are new and unused.
		By signing this declaration, the signatory below represents, warrants and agrees that he/she has been authorized by the Organization/s to make this declaration on its/their behalf.

Signature:

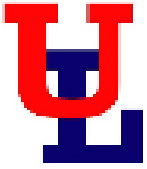
Name:

Title:

Date:

ANNEX 4: TECHNICAL AND FINANCIAL OFFER- Attachment

Bidders are requested to complete this form, sign it and return it as part of their bid along with Annex 2: Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.



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Name of Bidder:		
RFQ Reference:		Date:

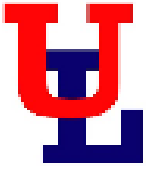
ANNEX 5: COMPLIANCE WITH REQUIREMENTS

	YOUR RESPONSE		
	Yes, we will comply	No, we cannot comply	If no, please indicate counteroffer
Full package of document required			
Validity of quotation: (30 days from submission)			
Delivery: 6 weeks after issuing of Contract:			
Full acceptance of all condition of the contract			
Installation of Equipment:			
Payment Terms- Pre-Finance (30 days after delivery)			

I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted.

Exact Name and address of company

Authorized Signature:



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Company Name:	Date:
Address:	Name:
Contact No:	Functional Title of Authorized Signatory:
Email Address:	

Annex 6: Minimum Criteria

A quotation will not be considered further if it does not meet the following minimum criteria:

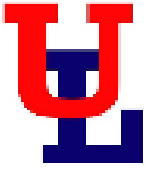
- Total Compliance to all Requirements of the RFQ Documents
- Bid is submitted on or before NOT LATER THAN **April 18, 2023, at the hour of 1:00 P.M local time.**

Annex 7: Evaluation Criteria

Quotations that meet the minimum criteria listed above may be further evaluated based on the following factors:

Minimum Score:		pts
Technical Specification		
Meets required technical specifications including reference checks	60	pts
Delivery Time	10	Pts
Financial/ Price	30	pts
<ul style="list-style-type: none"> • Bidder must obtain a minimum of 55% to qualify for financial evaluations. 		

- Not Applicable Award may be made with or without negotiations between the ULCHS and the selected vendor.



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- Award may be made to a vendor that provided the lowest priced technically acceptable quotation, or to a vendor other than the one that provided the lowest priced quotation, should that vendor be determined to have provided the best value quotation taking technical and cost factors into account.
- All vendors that submit quotations in response to this RFQ will be notified of the results.

NOTE: Issuance of this RFQ in no way constitutes a commitment by the UL-CHS to award a contract.

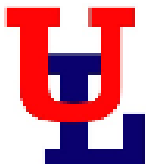
In case of further queries or clarification regarding the RFQ, kindly send an email to the email address above.

Sincerely,

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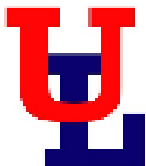
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Technical and Financial Offer- Supply Assorted Laboratory Equipment- Lot 1

No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
1	Equipment	Digital Electronic Circuit Trainer	Basic trainer for students to perform more than 15 basic experiment of operational amplifier Glass Epoxy PCB used as front panel of 300mmx220 & mounted on light weight shock proof plastic cabinet On board power supplies, function generator & Bread Board mounted Supplied with set of components & connecting wire (Bread Board Model)	pcs	1		
2	Equipment	Anemometer	The instrument has a cup wheel consisting of three conical cups in a horizontal plane. The cup wheel spindle is of stainless steel and connected worm gearing to a revolution counter mounted in a water proof housing. By observing the counter reading at the beginning and end of any period of interest the average wind speed during the interval can be calculated. The counter observing window is sloped to permit easy reading when mounted on the mast.	pcs	1		
3	Equipment	Acrylic Block Rectangular	Clear acrylic all faces fully polished (100 X 65 X18 mm)	pcs	60		



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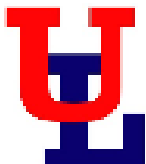
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
4.	Equipment	Analog Lab Trainer (Bread Board Model)	Advanced lab trainer for students to perform more than 50 experiments of analog electronics Compatible with optional ready to use experimental modules Glass Epoxy PCB used as front panel of 300mmx220mm & mounted on light weight shock proof plastic cabinet On board power supplies, Function generator and other input signals Bread board provided Supplied with connecting wires	pcs	1		
5.	Equipment	Hook and Weight		pcs	24		
6.	Equipment	Spring Balance Tubular		pcs			
7.	Equipment	upto 500 gm	Polystyrene bodies with large, easily read flat scales, zero adjustable device having anodized metal scale is provided.	pcs	24		
8.	Equipment	from 50gm to 3 kg	Polystyrene bodies with large, easily read flat scales, zero adjustable device having anodized metal scale is provided.	pcs	12		
9.	Equipment	Banana Plugs		pcs	100		
10.	Equipment	Calorimeter with Wooden Box	Copper, 75x50 mm., height x diameter, resting on felt pad inside wooden polished box, which is provided with a brass nickle plated thermometer holder with copper stirrer.	set	16		



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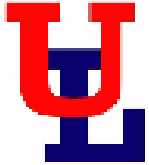
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
11.	Equipment	Calorimeter Set	A complete set in copper comprising 1 inner vessel carried on cork supports, 1 outer vessel diameter 1 lid for out vessel with central tubule for 5 thermometer and slit for 1-stirrer.	set	24		
12.	Equipment	Concave Mirror		pcs			
13.	Equipment	fl 50mm	Optically worked, silvered back with protective coating	pcs	40		
14.	Equipment	fl 100mm	Optically worked, silvered back with protective coating	pcs	40		
15.	Equipment	fl 150mm	Optically worked, silvered back with protective coating	pcs	40		
16.	Equipment	fl 200mm	Optically worked, silvered back with protective coating	pcs	40		
17.	Equipment	fl 300mm	Optically worked, silvered back with protective coating	pcs	40		
18.	Equipment	Concave Glass lens		pcs			
19.	Equipment	fl 50mm	Optically worked, with protective coating	pcs	40		
20.	Equipment	fl 100mm	Optically worked, with protective coating	pcs	40		
21.	Equipment	fl 150mm	Optically worked, with protective coating	pcs	40		



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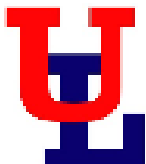
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
22.	Equipment	fl 200mm	Optically worked, with protective coating	pcs	40		
23.	Equipment	fl 300mm	Optically worked, with protective coating	pcs	40		
24.	Equipment	Connected Leads	Insulated, PVC coated, with 4mm Banana plugs	pcs	100		
25.	Equipment	Convex Mirror		pcs			
26.	Equipment	fl 50mm	Optically worked, silvered back with protective coating	pcs	40		
27.	Equipment	fl 100mm	Optically worked, silvered back with protective coating	pcs	40		
28.	Equipment	fl 150mm	Optically worked, silvered back with protective coating	pcs	40		
29.	Equipment	fl 200mm	Optically worked, silvered back with protective coating	pcs	40		
30.	Equipment	fl 300mm	Optically worked, silvered back with protective coating	pcs	40		
31.	Equipment	Convex Glass lens		pcs			
32.	Equipment	fl 50mm	Optically worked, with protective coating	pcs	40		



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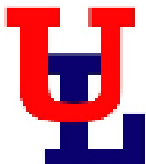
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
33.	Equipment	fl 100mm	Optically worked, with protective coating	pcs	40		
34.	Equipment	fl 150mm	Optically worked, with protective coating	pcs	40		
35.	Equipment	fl 200mm	Optically worked, with protective coating	pcs	40		
36.	Equipment	fl 300mm	Optically worked, with protective coating	pcs	40		
37.	Equipment	Decade Resistance Box	This decade resistance substitution box provides 4 decade ranges from 0 to 11110 Ω with a resolution of 1W. Each decade is selected by a rotary switch. Tapping points are provided across each range to allow the unit to be used as an accurate potential divider. All resistance values are + 2% with a rating of 0.25 W maximum per range	pcs	24		
38.	Equipment	Displacement Vessel	Metal, size 115mm x90 mm (HxD) with spout for specific gravity experiments	pcs	6		
39.	Equipment	Ammeter (digital)	Portable type, having large display of 3½ digits, type LCD, power 9 Volts battery, accuracy + 1 digit, size 125x65 mm. DC current ranges: 0-199.9 mA 0-1.99 mA 0-19.9 mA	pcs	24		



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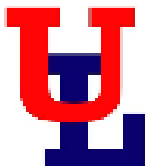
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
			0-199.9mA 0-10 Amp				
40.	Equipment	Voltmeter (digital)	Portable type, having large display of 3½ digits, type LCD, power 9 Volts battery, accuracy + 1 digit, size 125x65 mm. DC voltage ranges: 0-199.9 mV 0-1.99 V 0-19.9 V 0-199.9 V	pcs	24		
41.	Equipment	Direct Vision Spectroscope	<ul style="list-style-type: none"> complete and light weight direct vision spectroscope without wavelength scale for observing visible radiations from 400 to 750 mm compact visible spectroscope with wavelength scale which allows the direct reading of spectral length and employs a prism for dispersion. It is also useful for flame test of basic radicals (sodium, strontium, potassium, copper etc.) There is a single eyepiece and independent focussing tube for the graticule, which carries an index at 590mm. with "D", marked right below the scale, (corresponding to the wave length of sodium light) can be calibrated to a known light source by 	pcs	2		



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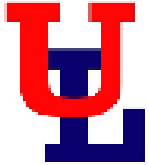
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
			adjustment of knurled screw. The amount of light admitted to the spectroscope can be regulated by a variable slit, adjusted by a knurled ring round the rating tube.				
42.	Equipment	Electromagnet	Lifting type. Built with a coil of 300 turns of insulated copper wire. Operates on 6-12 volts and will easily lift 15 kg. when energized by a current of 6-8 amperes. Complete with disc armature.	pcs	2		
43.	Equipment	Fly Wheel	About 20 cm. in dia. and 45 mm. wide turned and carefully balanced, mounted on a horizontal shaft, held in ball bearings. The wheel is marked and pointer is fixed to the bracket. The bracket has four holes and can be fixed to the wall.	pcs	2		
44.	Equipment	Friction Board Apparatus	Wooden friction board 490 x 75 x 20 mm. A wooden slider with hook 140 x 70 x 20 mm. A plain aluminum slider and an aluminum slider with rubber backing. A further long aluminum slider is provided which fits over the friction board to provide an alternative surface type.	set	16		
45.	Equipment	Soldering Station with Digital Display	Power Consumption: 48 W Temperature: 160 - 420 OC Voltage: 220 - 240 VAC/50 Hz Included with 3pcs replacement tips	pcs	2		



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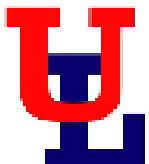
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No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
46.	Equipment	Electronic Tools Kit	The Tools Kit Consists of:• Utility component storage box• Long nose plier 135mm• Diagonal cutting plier 110mm• Dual Color Lineman's plier• Bent nose plier 130mm• Side cutting plier 150mm• Dual Color Long nose plier• Reverse action tweezer• 3pcs soldering aid tools• Soldering iron stand with sponge• Adjustable wrench 6"• Ceramic soldering iron 220V• Electronic Hex Nut Drivers, size 5mm• Electronic Hex Nut Drivers, size 6mm• Flat Tip (-) Screwdriver, 3.2 x 75mm• Phillips (+) Screwdriver, #0 x 75mm• Flat Tip (-) Screwdriver, 5.0 x 75mm• Phillips (+) Screwdriver, #1 x 75mm• Flat Tip (-) Screwdriver, 6.0 x 100mm• Phillips (+) Screwdriver, #2 x 100mm• Flat Tip (-) Pro-soft screwdriver, 6.0 x 40mm• Phillips (+) Pro-soft screwdriver, #2 x 40mm• Desoldering wick• Brush• 6pcs electronic screwdriver set• Crimping tool (metric)• Desoldering pump• 5pcs needle file set• Testing screwdriver• Alignment tool (200mm/2.0mm)• IC extractor• Oil can• Flash light• 7pcs folding type hex key set (metric)• 3 Prong holder• 6pcs open-end wrench set• Heavy Duty Curved-Claw Hammer• PVC insulated tape• Stainless scissors 6"• Solder core 63%, SN• Parts tube• Heat sink• Utility knife (3 blades self loading)• Measuring tape 3M/10FT• Inspection mirror• Slip-channel pump pliers 254mm• Pallet for tool kit• Top pallet tool kit• Carrying tool case	kit	1		



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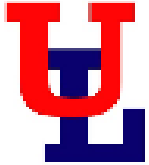
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47.	Equipment	Discrete Component Trainer	Power Supply of +5V, +12V, -12V each of 250 mA (nominal) Silicon, Germanium diodes, Zeners PNP & NPN Transistors, FET One speaker 12 different values of carbon film resistances & they are of ¼w, ½w & 1 Watt 12 assorted values of capacitors from 100 PF to 100 mF Integrated Circuits (IC's), Thermistor LED, LDR, Photo diode, solar cell Logic switches & LED indicators etc. (With Regulated Power Supply)	pcs	1		
48.	Equipment	Electronic Plug In Kit	Student uses Plug- in Modules himself for preparation of circuit. Exp-1 To Study LR Circuit Exp-2 To Study CR Circuit Exp-3 To Study LCR Circuit Exp-4 To Study Charging and Discharging of a Capacitor Exp-5 To Study Clipper and Clamper Circuit Exp-6 To Study Half Wave and Full Wave (Bridge) Rectifier Exp-7 To Study Capacitor Filter Effect in Power Supply	kit	1		



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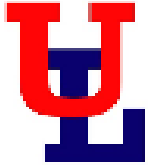
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			Exp-8 To Study Power Supply Exp-9 To Study Unregulated and Regulated Power Supply Exp-10 To Study PN Junction Diode Characteristics Exp-11 To Study LED Characteristics Exp-12 To Study Zener Characteristics Exp-13 To Study Transistor Input/Output Characteristics Exp-14 To Study CE Amplifier Frequency Response Exp-15 To Study RC-Coupled Amplifier (Multistage bAmplifier) Exp-16 To Study Differential Amplifier Circuits Exp-17 To Study Astable Multivibrator Circuit Using Transistor Exp-18 To Study Colpitt's Oscillator				



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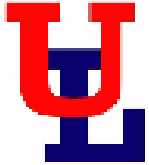
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			Exp-19 To Study Hartley Oscillator Exp-20 To Study JFET Characteristics Exp-21 To Study MOSFET Characteristics Exp-22 To Study Characteristics of SCR Exp-23 To Study Characteristics of TRIAC Exp-24 To Study UJT as Relaxation Oscillator Exp-25 To Study Logic Gates Exp-26 To Study Demorgan's Theorem Exp-27 To Study Half Adder and Full Adder Circuit Exp-28 To Study Half Subtractor Exp-29 To Study BCD to 7-Segment Decoder Using 7- Segmen Display				



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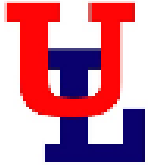
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			Exp-30 To Study Decade Counter				
			Exp-31 To Study R-S Flip Flop				
			Exp-32 To Study D Flip Flop				
			Exp-33 To Study J-K Flip Flop				
			Exp-34 To Study Shift Registers				
			Exp-35 To Study ADC/DAC Circuits				
			Exp-36 To Study Op-Amp as Inverting/Non Inverting Amplifier				
			Exp-37 To Study Op-Amp as Adder/Subtractor				
			Exp-38 To Study Op-Amp As Integrator/Differentiator				
			Exp-39 To Study RC Phase Shift Oscillator Using Op-Amp				
			Exp-40 To Study Wein-Bridge Oscillator Using Op-Amp				



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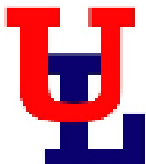
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			Exp-41 To Study Solar Cell Characteristic Exp-42 To Study OP-Amp as a Comparator Exp-43 To Study Astable Generators Using IC555 Timer Exp-44 To Study Mono-stable Generators Using IC555 Timer Exp-45 To Study Ohm's Law Exp-46 To Study Kirchoff's Law Exp-47 To Study Series & Parallel Effect of Resistance Exp-48 To Study Resistance as a Voltage Divider Exp-49 To Study LDR Characteristics Exp-50 To Study Thermistor Characteristics				
49.	Equipment	Wheatstone Bridge	Four gap system, enabling two additional resistances to be interpolated in the additional gaps, enables greater accuracy of measurement by reducing unwanted resistances to a	pcs	12		



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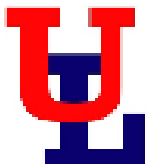
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			minimum.Two brass strips are provided to close the gaps when so required. Complete with jockey.				
50.	Equipment	AC-DC Power Supplies	Mains Input : 220-240 V a.c. 50/60 Hz Output Voltages : 0 to 25 V a.c. and unsmoothed full wave rectified d.c. Output current : 10 A maximum a.c.: 8 A maximum d.c. Voltage Selection : Rotary continuously variable transformer operated by a large knob on front panel. Metering : A.c. and d.c. output voltages by a moving coil meter with selector switch to select a.c. or d.c. Circuit protection : Mains input 3 A internal glass fuselink. Output is protected by a resettable cut-out. Output terminals : Colour coded 4 mm sockets.	pc	3		
51.	Equipment	Constantan Wire	Double enameled, SWG 48, on reel of 50 g net.	pcs	6		
52.	Equipment	Contact Key Single	A spring arm, press knob, contact stud and a connecting strip with two 4 mm. terminals on plastic base of 100 x 60 mm. size.	pcs	16		
53.	Equipment	Copper Wire Polyurethane	Net weight 20 250 g.	pcs	2		



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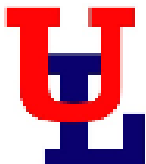
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54.	Equipment	Flexible Leads PVC		pcs			
55.	Equipment	250mm	Insulated, with crocodile clip at each end.	pcs	60		
56.	Equipment	500mm	Insulated, with crocodile clip at each end.	pcs	60		
57.	Equipment	750mm	Insulated, with crocodile clip at each end.	pcs	32		
58.	Equipment	Plug Switch One Way	Two brass blocks with 4mm insulated terminals are mounted on a moulded base, an accurately tapered plug with a fluted top fits into the tapered hole between the two blocks, ensuring very low contact resistance.	pcs	24		
59.	Equipment	Plug Switch Two Way	With three brass blocks, each with a 4mm insulated terminal and two standard tapered plugs to fit the two holes between the blocks.	pcs	18		
60.	Equipment	Advanced Polarimeter Experiment Kit	<ul style="list-style-type: none">Using illuminating lens and filter gives collimated polarized light3 minutes against 6 minute of the conventionally available modelTriple shadow field is produced on Half Wave Length plate by the polariser	pc	1		



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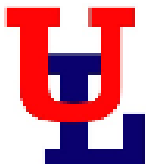
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61.	Equipment	Milikan Oil Drop Experiment	<ul style="list-style-type: none">• Compact designed light source, microscope & condensers• Easy to operate and understand• Condenser System can be easily Disassembled for cleaning and Inspection• Accurate measurement of plate voltage, plate separation, time and distance of droplet is done with this apparatus.	pcs	1		
62.	Equipment	Thermocouple Double	Copper-constantan-copper, to form hot and cold junctions. Length of soldered junctions is about 38 mm The coiled lead is about 50 mm long.	pcs	6		
63.	Equipment	Digital Rain Gauge	Wireless Digital rain gauge	pcs	1		
64.	Equipment	Humidity Sensors	These humidity sensors for indoor as well as outdoor use. The function of our humidity sensors is to measure the humidity levels in the air.	pcs	1		
65.	Equipment	Anemometer	The purpose is to measure the velocity of wind.	pcs	1		
66.	Equipment	Evaporimeter	The evaporation rate is extremely sensitive.	pcs	1		



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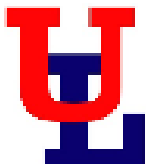
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67.	Equipment	Temperature Humidity Recorders	Our Temperature Humidity Recorder is a user friendly equipment for the data collection of temperature and humidity. These Temperature Humidity Recorders are embraced with many special features such as 8-bit resolution, Record 7943 readings and Blinking LED confirms operation etc. In case of battery failure, it keeps the data safe with Nonvolatile memory.	pcs	1		
68.	Equipment	Ultraviolet Sensor	A completely reliable range of Ultraviolet Sensor is available with us.	pcs	1		
69.	Equipment	Wind Vane	Best quality Wind Vane for indicating the direction of wind.	pcs	2		
70.	Equipment	Distance Measure Laser	<ul style="list-style-type: none"> • Distance Measurer: Range 200mt./650ft. • Accuracy \pm 1.5mm upto 30mt • With area calculation in mt & ft. 100mt without target Plate • Accuracy \pm 2mm • With area calculation in mt & ft. • Digital read-out illuminated angle slope, degree, horizontal & 	pcs	1		



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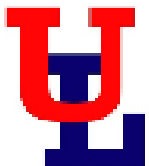
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			diagonal measurement, determining height using pythagoras function, recall value 20, measurement of inaccessible location easy to use short-cutkeys intergrated telescopic viewfinder.				
71.	Equipment	Digital Spectrophotometer	MODEL ET-31 ET-38 Range 340 to 960 nm 340 to 960 nm Resolution 0.1%T, 0.001 Abs 0.1%T, 0.001 Abs Output %T: 0 to 100%, Abs; 0 to 1.999, Conc: 0 to 1999 %T: 0 to 100%, Abs; 0 to 1.999, Conc: 0 to 1999 Detector Silicon Photo diode Silicon Photo diode Light source 6V I Amp. Vertical Tungsten Halogen Lamp	pcs	1		



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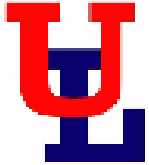
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			6V I Amp. Vertical Tungsten Halogen Lamp Monochromate 600 Lines / mm grating 600 Lines / mm grating Path length 10 mm 50 mm Spectral bandwidth 10 mm 10 mm Wave length resolution 5 nm - 1 nm 5 nm - 1 nm Wave length accuracy 2.5 nm 2.5 nm Repeatability ± 2 nm ± 1 nm ± 2 nm ± 1 nm Display 3 ½ digit LED Dual Display 3 ½ digit LED Dual Display				



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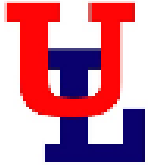
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			Operating temp. 5 to 45°C 5 to 45°C Power range 230V ±10% AC, 50 Mz 230V ±10% AC, 50 Mz Dimensions 490 x 300 x 165 mm 490 x 300 x 165 mm Weight 8.5 Kg (Approx) 8.5 Kg (Approx) Accessories 10 Test tubes (12mm dia) Dust Cover Operation Manual 10 Test tubes (12mm dia)				
72.	Equipment	Decade capacitor box .	High quality standard laboratory tool to fulfill the requirement of different values of standard capacitance. Each dial consisting of 10 steps. Features: Easy to operate, Superior functions, Seamless finish	pcs	4		



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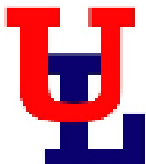
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73.	Equipment	Decade inductor box .	It is s used various electrical labs for measuring purpose. Features: Easy to operate, Superior functions, Seamless finish Specifications: • 4 Dials, Standard Range • 4 Dials, X 1, 10, 100 mH & 1H • Range 1 mH to 11.11 Henry • Accuracy 1 %lt	pcs	2		
74.	Equipment	Signal generator (scine tec).	* ideal EMS signal source with specified frequency range from 5 kHz * AM, FM, φM, pulse modulation * FM DC with high carrier frequency accuracy	pcs	1		
75.	Equipment	Mercury lamps.	* The luminous efficiency is two times higher than GLS * Long using life * Low using cost * High efficacy * Used in enclosed or open fixtures	pcs	2		
76.	Equipment	Vernier calipers	The Vernier caliper is an extremely precise measuring instrument; the reading error is 1/20 mm = 0.05 mm.	pcs	24		
77.	Equipment	Screw gauge	• Brass body, with steel screw of 0.5 mm pitch.	pcs	24		



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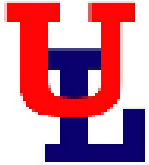
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			<ul style="list-style-type: none"> • Thimble with ratchet stop • Range 0 to 25 mm • Reading to 0.01 mm, in plastic pouch. 				
78.	Equipment	Sodium vapour lamp	* Al2O3 Ceramic Tube. * Sodium Vapor.	pcs	1		
79.	Equipment	Digital stop clock	<ul style="list-style-type: none"> * It is a high accuracy, easy to use unit that can be used either as a standard timer or may be automatically started and stopped by an externally connected device. * Uses a 30ppm quartz crystal and 27pF fixed calibrated capacitor for high accuracy * External start/stop control connection via 4mm jack sockets * Stop/Start and reset buttons on top of unit for easy activation * Elapsed time function * 15mm LCD display 	pcs	2		
80.	Equipment	Electric stove .		pcs	3		
81.	Equipment	Spectral response of a photodiode and its I-V characteristics.		pcs	1		
82.	Equipment	Audio frequency oscillator (1KHz)	It is suitable for Colleges, R & D Laboratories, Servicing Units, Defence etc. It has Digital read out of frequency. Hence reading of frequency is obtained.	pcs	1		



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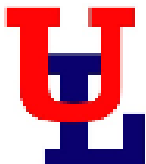
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			Sine Wave Frequency : 1 Hz to 1 MHZ continously variable in 6 decade ranges Output aimpedance : 600 ohms Output Amplitude : Variable from10mV to30V (PTP) in 3 decades continuously variable between the decades Dial Accuracy : +/- 3% fsd +/-5 Degree Frequency Response : Within 0.5 dbs over the entire range Distortion : Less than 0.5% from100 Hz to 100KHz Square Wave Frequency : 1 Hz to 1 MHz in 6 decades continously variable Output Impedance : 600 ohms Output Amplitude : 0-10V continously variable in 3 decades range Dial Accuracy : =/- 3% FSD =/- 1 Degree Symmetry : Variable from 30% to 70% approx				



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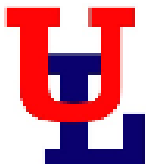
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			Rise Time/Fall Time : Better than 70n seconds across 600 ohms				
83.	Equipment	Daniel cell full set .	The Daniell cell is also the historical basis for the contemporary definition of the volt, which is the unit of electromotive force	set	4		
84.	Equipment	Lechlanche cell jar .	<ul style="list-style-type: none"> Electricity-cells-leclanche cell- it consists of 2 pint size complete with charged porous pot with screw terminal zinc rod with wire connector Glass jar/plastic jar 	set	4		
85.	Equipment	Metallic optical bench full set (long) .	It consists of two metallic rods (one rod is engraved in mms) supported by cast iron feet with one side levelling screw , provided with 4 metal riders. Two of the sliders have transverse motion and two lens holders, two optical pins. Improved design one meter long. full shapered suitable for precision work	set	12		
86.	Equipment	Resistance coil:1 Ω , 2 Ω , 3 Ω	Resistances. 1, 2, 3 ohm	set	120		
87.	Equipment	Glass prism.	Right-angle prisms can demonstrate total internal reflection, neatly turn light beams 90 degrees (use two to build a periscope) or split a single laser beam into two!	pcs	8		



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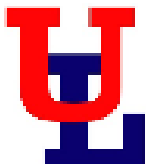
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88.	Equipment	Resonance column apparatus full set (for determination of speed of sound).	This large resonance apparatus measures nearly 4' in height when fully assembled, and consists of a 90cm graduated acrylic tube connected by rubber tubing to a large aluminum water reservoir. The reservoir can be raised or lowered to adjust the length of the air column. Dual universal clamps support the acrylic tube. Comes complete with a metal support stand. A tuning fork is required (sold separately).	set	4		
89.	Equipment	Parallelogram law apparatus full set.	The apparatus comprises a strong drawing board 750 x 600 x 12mm, fitted with sockets and Brackets for fixing to a wall, with two pulleys 50mm diameter, with clamp for mounting in any position; four S-hooks, scale pan 100mm diameter	set	4		
90.	Equipment	sonometer and elecmagnet (full set).	Frequency of a measuring instrument with sonometer and elecmagnet (full set).	set	1		
91.	Equipment	Friction board with block and pully set.	Inclined wood plane, 600 x 75 mm, hinged to base at one end carries a pulley at the other. A movable block enables variation of inclination of plane, a friction slide of size 100 x 65 mm which is reversible and has one side cut away for half of its area. Complete with metal roller 75 x 25 mm dia, with pan but without masses.	set	12		



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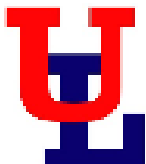
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92.	Equipment	Helical spring with stand (full set).	The apparatus consists of a spiral spring about 25mm in diameter and 10cm long. The upper end of the spring is suspended from chucknut and lower and is provided with small pointer which moves over a vertical wooden meter scale. The lower end is also provided with hook for carrying weights. All this setup is provided on a heavy metal base and with weights	set	12		
93.	Equipment	Potentiometer .	<ul style="list-style-type: none">• Range 0 to 2000mV. • Resolution 0.1 mV.• Slope Correction 80% to 120%. • Repeatability 1 mV.• Accuracy ± 1 mV \pm digit. • Input Impedance 10 ohms.• Operating Temperature 0° to 50°C. • Display 3½ Digit LED display	pcs	8		
94.	Equipment	Calorimeter.	<ul style="list-style-type: none">• Std Glass Filter 8 • Minimum Volume 1 ml.• Display 3 digit, Red 7 Segment LED.• Key Board 2 Key Soft Touch membrane Type.• Range 400-700 nm. • Output OD : 0 to 1.99, %T : 0 to199.	pcs	2		



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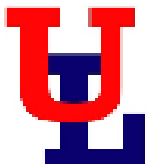
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			<ul style="list-style-type: none"> • Resolution OD : 0.01, %T : 1 %. • Accuracy 0.5% FSI. • Detector Selenium Photocell/Photodiode. • Main Feature Automatic zero calibration. 				
95.	Equipment	Stalgmometer with stand	Stalagmometers are used to measure surface tension for control of wetting agents in nickel, acid copper, acid zinc, acid dips, acid pickles and chromic acid Electroplating Baths.	pcs	6		
96.	Equipment	Copper Wire 0,3 mm/100 m	Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire. Material: Copper Length: 100 m Diameter: 0.3 mm	roll	1		
97.	Equipment	Iron Wire 0,3 mm/ 100 m	Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire. Material: Iron (without coating) Length: 100 m Diameter: 0.3 mm	roll	1		
98.	Equipment	Nickel Wire 0,3 mm / 50 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire.	roll	2		



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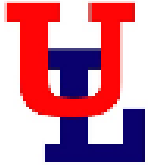
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Monrovia, Liberia

Cell Phones: 0770000333 / 0777524513 / 0886 524513

Email : ulchs@ul.edu.lr

No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
99.	Equipment	Chrome-Nickel Wire 0,3 mm/ 100 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire	roll	1		
100.	Equipment	Constantan Wire 0,2 mm / 100 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire.	roll	1		
101.	Equipment	Constantan Resistance 0,3 mm / 100 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire.	roll	1		
102.	Equipment	Constantan Resistance 0,4 mm / 50 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire.	roll	1		
103.	Equipment	Brass Resistance 0,3 mm / 50 m	Resistance Wires Metal wires on bobbins, e.g. for experiments to investigate how resistance depends on the material, cross-sectional area and length of the wire.	roll	1		
104.	Equipment	Inductance Decade Box - high accuracy, with slide switches	Variable inductance decade in impact-resistant plastic housing. This series incorporates mechanically stable components, a slide switch for setting measurement ranges and 4-mm safety sockets to ensure that all connections are safe.	pcs	1		
105.	Equipment	Iron Filings	250 g of iron filings for displaying magnetic field lines. In a storage flask.	bottle	1		



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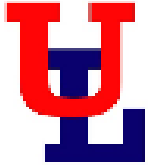
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106.	Equipment	Pocket Compass	Compass in a stable housing, low friction needle bearing, including a compass card and angle scale. Scale division: 2° Diameter: approx. 45 mm	pcs	6		
107.	Equipment	Linear Resistor, 10 MOhm	Components in plug-in housings with two plugs separated by 19 mm. Resistance: 10 MΩ Tolerance: 1 % Max. power: 0,5 W	pcs	4		
108.	Equipment	Thermistor PTC	Components in plug-in housings with two plugs separated by 19 mm. Max. temperature: 150°C Type: PTC Resistance (25°C): 100 Ω	pcs	3		
109.	Equipment	Capacitor 22 nF	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 22 nF Tolerance: 20 % Max. tension: 100 V	pcs	4		
110.	Equipment	Capacitor 0.22 μF	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 0,22 μF Tolerance: 5 % Max. tension: 250 V	pcs	4		
111.	Equipment	Capacitor 1 nF	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 1 nF Tolerance: 20 % Max. tension: 100 V	pcs	4		
112.	Equipment	Capacitor 10 nF	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 10 nF Tolerance: 20 % Max. tension: 100 V	pcs	4		
113.	Equipment	Capacitor 0.1 μF	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 0,1 μF Tolerance: 20 % Max. tension: 100 V	pcs	4		



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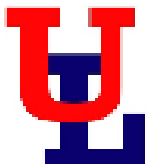
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114.	Equipment	Electrolytic Capacitor 10 μ F	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 10 μ F Tolerance: 20 % Max. tension: 35 V	pcs	4		
115.	Equipment	Electrolytic Capacitor 100 μ F	Components in plug-in housings with two plugs separated by 19 mm. Capacitance: 100 μ F Tolerance: 20 % Max. tension: 35 V	pcs	4		
116.	Equipment	Semiconductor Diodes, Ge, 90 V	Components in plug-in housings with two plugs separated by 19 mm. Type: AA 118 Material: Ge Cut-off voltage: 90 V Max. long-term current: 50 mA	pcs	2		
117.	Equipment	Semiconductor Diodes, Si, 1000 V	Components in plug-in housings with two plugs separated by 19 mm. Type: 1N 4007 Material: Si Cut-off voltage: 1000 V Max. long-term current: 1 A	pcs	2		
118.	Equipment	Zener Diode, ZPD 3.3	Components in plug-in housings with two plugs separated by 19 mm. Type: ZPD 3.3 Max. power dissipation: 0.5 W	pcs	1		
119.	Equipment	Zener Diode, ZPD 9.1	Components in plug-in housings with two plugs separated by 19 mm. Type: ZPD 9.1 Max. power dissipation: 0.5 W	pcs	1		
120.	Equipment	Zener Diode, ZPD 6.2	Components in plug-in housings with two plugs separated by 19 mm. Type: ZPD 6.2 Max. power dissipation: 0.5 W	pcs	1		
121.	Equipment	Operational Amplifier, LM 741, P4W50	Components in plug-in housings with four plugs separated by 50 mm. Operating voltage: \pm 15 V DC Output current: 15 mA	pcs	3		



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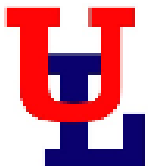
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122.	Equipment	NPN Transistor, BC 140, P4W50	Component in plug-in housing with four plugs separated by 50 mm. Type: NPN BC 140 Current gain: 100 – 250 Power dissipation: 0.8 W	pcs	3		
123.	Equipment	PNP Transistor, BC 160, P4W50	Component in plug-in housing with four plugs separated by 50 mm. Type: PNP BC 160 Current gain: 100 – 250 Power dissipation: 3.7 W	pcs	3		
124.	Equipment	Precision Hair Hygrometer	Hygrometer for measuring the relative air humidity, consisting of a round plastic housing with a synthetic hair as the measuring element. The specially treated hair exhibits an almost inertia-free response to changes in humidity. Wall-mountable .	pcs	1		
125.	Equipment	Digital Pocket Anemometer	Waterproof anemometer for measuring wind speed. Indication of wind chill temperature based on the combination of air temperature and wind speed. Indication of mean and maximum speeds. Wind curves on the Beaufort scale. Supplied with closeable	pcs	1		
126.	Equipment	Aluminium Shot, 100 g	Granules for filling calorimeters.	pcs	4		
127.	Equipment	Copper Shot, 200 g	Granules for filling calorimeters.	pcs	3		



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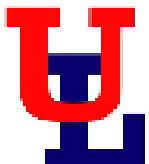
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128.	Equipment	Glass Shot, 100 g	Granules for filling calorimeters.	pcs	4		
129.	Equipment	Calorimeter with Heating Coil, Pluggable, 1200 ml	Calorimeter for determining specific heat capacities, conversion energies of materials, mixing temperatures as well as measurement of electrical equivalents of heat. Consists of a double-walled, heat-insulating plastic container with an insulating ...	set	1		
130.	Equipment	Copper Calorimeter	Granules for filling calorimeters.	set	1		
131.	Equipment	Calorimeter with Heating Coil, 150 ml	Calorimeter for determining the specific heat capacity of solids and liquids and for measuring the electric heat equivalent. Two mutually insulated aluminum beakers, lid with rubber stopper with boreholes for thermometer and stirrer, with heating ...	set	4		
132.	Equipment	Immersion Heater (230 V, 50/60 Hz)	Immersion heater with protection against overheating (VDE-compliant). Important: operates solely on a mains voltage of 230 V	pcs	7		
133.	Equipment	Rubber Balloons(Set of 100)		set	1		
134.	Equipment	Immersion Heater, 12 V	Sheathed heater suitable for the metal block calorimeters (from 1003253). Operating voltage: max. 12 V Power: max. 50	pcs	3		



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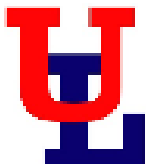
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			W (nominal) Tubing: 150 mm long Heated section: 70 mm Electrical connection: 4 mm safety plugs				
135.	Equipment	Thermometer -10°C – 200°C	Measuring range: -10° – 200°C Scale division: 1° C Dimensions: 300 mm x 6 mm dia. Remarks: Rod-shaped general-purpose thermomete, white-coated capillary, red indicator liquid, total immersion depth	pcs	18		
136.	Equipment	Diaphragm with 3 Double Slits of Different Widths	Photographic diffraction objects in a slide frame. Dimensions: 50x50 mm ² Slit width [mm]: 0.10; 0.15; 0.20 Slit spacing [mm]: 0.30 No. of slits: 2	pcs	2		
137.	Equipment	Diaphragm with 4 Double Slits of Different Spacings	Photographic diffraction objects in a slide frame. Dimensions: 50x50 mm ² Slit width [mm]: 0.15 Slit spacing [mm]: 0.25; 0.50; 0.75; 1.00 No. of slits: 2	pcs	2		
138.	Equipment	Diaphragm with 4 Multiple Slits and Gratings	Diaphragm with 4 Multiple Slits and Gratings. Photographic diffraction objects in a slide frame. Dimensions: 50x50 mm ² Slit width [mm]: 0.15 Slit spacing [mm]: 0.25	pcs	2		
139.	Equipment	Diaphragm with 3 ruled gratings	Diaphragm with 3 ruled gratings. Photographic diffraction objects in a slide frame. Dimensions: 50x50 mm ² Line count (cm-1): 20; 40; 80 Lattice constant (mm): 0.50; 0.25; 0.125	pcs	2		



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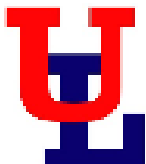
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140.	Equipment	Diaphragm with 3 Circular Hole and Disc Paires	Photographically prepared and mounted in slide frames. \emptyset [mm]: 1.00; 1.50; 2.00	pcs	2		
141.	Equipment	Object Holder N	Object holder with magnetic base to accommodate optical apertures in slides (50x50 mm ²), e.g. single slit N (U8470870) or triple/quintuple slit N (U8478110)	pcs	6		
142.	Equipment	Transmission Grating 600 Lines/mm	Transmission grating for spectroscopic examinations and for experiments on diffraction and interference. Suitable to resolve the Na-D lines. Mounted on glass carrier. Dimensions: 38 mm x 50 mm	pcs	2		
143.	Equipment	Transmission Grating 300 Lines/mm	Transmission grating for spectroscopic examinations and for experiments on diffraction and interference. Suitable to resolve the Na-D lines. Mounted on glass carrier. Dimensions: 38 mm x 50 mm	pcs	2		
144.	Equipment	Grating 600/mm	Line gratings in slide frames. For students and demonstration experiments. Dimensions: 50x50 mm ² Number of lines per mm: 600	pcs	2		
145.	Equipment	Grating 1000/mm	Line gratings in slide frames. For students and demonstration experiments. Dimensions: 50x50 mm ² Number of lines per mm: 1000	pcs	2		



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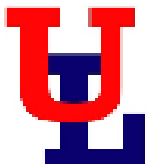
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146.	Equipment	Spectroscope in Cardboard Case	Hand spectroscope in a flat cardboard box with built-in wavelength scale for direct reading of coarse wavelengths for spectral lines and spectra. Dimensions: 180 x 115 x 25 mm	pcs	2		
147.	Equipment	Light Box P	Colours: Coloured light and coloured objects Mixture of colours Shadows: Casting shadows Coloured shadows Reflection: Reflection from a plane mirror Reflected images, image reversal	pcs	3		
148.	Equipment	Spare Lamp for Light Box	Spare lamp for light box, 12 V, 36 W	pcs	6		
149.	Equipment	Convex Lens N, f = +300 mm	Lenses made of high-quality optical glass. Breakage and impact-resistant, set in a slide with magnetic base. Dimensions: 70x70 mm ² Lens diameter: 36 mm f = +300 mm	pcs	4		
150.	Equipment	Convex Lens N, f = +100 mm	Lenses made of high-quality optical glass. Breakage and impact-resistant, set in a slide with magnetic base. Dimensions: 70x70 mm ² Lens diameter: 36 mm f = +100 mm	pcs	4		
151.	Equipment	Convex Lens N, f = +50 mm	Lenses made of high-quality optical glass. Breakage and impact-resistant, set in a slide with magnetic base. Dimensions: 70x70 mm ² Lens diameter: 36 mm f = +50 mm	pcs	4		
152.	Equipment	Concave Lens N, f = -100 mm	Lenses made of high-quality optical glass. Breakage and impact-resistant, set in a slide with magnetic base. Dimensions: 70x70 mm ² Lens diameter: 36 mm f = -100 mm	pcs	4		



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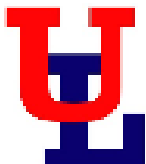
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153.	Equipment	Object Holder N	Object holder with magnetic base to accommodate optical apertures in slides (50x50 mm ²), e.g. single slit N (U8470870) or triple/quintuple slit N (U8478110)	pcs	8		
154.	Equipment	Optical Bench K, 1000 mm	Optical bench made of black anodised aluminium profile with printed millimetre scale. Cross-section: 70x30 mm ² approx. Length: 1000 mm Weight: 1,2 kg	pcs	6		
155.	Equipment	Optical Bench K, 2000 mm	Optical bench made of black anodised aluminium profile with printed millimetre scale. Cross-section: 70x30 mm ² approx. Length: 2000 mm Weight: 2,4 kg	pcs	2		
156.	Equipment	Optical Rider K	Optical rider for K-model optical benches (U8475337 and U8475336). With two clamps for diaphragms from the Kröncke optical system or for plates up to 2 mm thick. Dimensions: approx. 40x50x35 mm ³ Weight: approx. 70 g	pcs	8		
157.	Equipment	Optical Lamp K	Halogen lamp in cylindrical housing attached to diaphragm screen (100x100 mm ²) for mounting on K-model optical riders (U8475350). The filament can be aligned horizontally or vertically. Halogen lamp: 12 V, 20 W Terminals: 4 mm safety sockets	pcs	3		
158.	Equipment	Clamp K	Tough clamp for diaphragms, filters, diffraction objects and other objects in a slide frame. On diaphragm screen 100x100 mm ² . Clamping range: 0.2 – 4 mm Dimensions: 100x100 mm ² Round opening: 38 mm dia	pcs	6		



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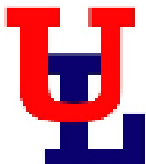
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159.	Equipment	Convex Lens K, f = 500 mm	Lenses made of high-grade optical glass. Shock-proof and crack-proof installation in optical diaphragm (100x100 mm ²). With focal length specification. Dimensions: 100x100 mm ² Lens diameter: 32 mm	pcs	4		
160.	Equipment	Concave Lens K, f = -100 mm	Lenses made of high-grade optical glass. Shock-proof and crack-proof installation in optical diaphragm (100x100 mm ²). With focal length specification. Dimensions: 100x100 mm ² Lens diameter: 32 mm	pcs	4		
161.	Equipment	Concave Lens K, f = -500 mm	Lenses made of high-grade optical glass. Shock-proof and crack-proof installation in optical diaphragm (100x100 mm ²). With focal length specification. Dimensions: 100x100 mm ² Lens diameter: 32 mm	pcs	4		
162.	Equipment	Projection Screen K, Transparent	Plastic projection screens for mounting on K-model optical riders (U8475350). Dimensions: 200x150 mm ²	pcs	8		
163.	Equipment	Projection Screen K, White	Plastic projection screens for mounting on K-model optical riders (U8475350). Dimensions: 200x150 mm ²	pcs	8		
164.	Equipment	Pair of Polarisation Filters K	Two polarising filters on a diaphragm screen (100x100 mm ²) for producing and analysing polarised light. In a rotating frame with a pointer and protractor scale. Scale: 0 – 180° Scale division: 5° Dimensions: 100x100 mm ² Filter diameter	pcs	1		



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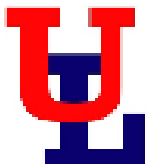
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165.	Equipment	Micrometer Screw K	Micrometer screw with fine tip for measuring diffraction and interference lines. Holder fits the optical rider K (U8475350). Dimensions: approx. 80x30x60 mm ³ Weight: approx. 120 g	pcs	3		
166.	Equipment	Projection Screen	Translucent screen, shaft-mounted, for all projection purposes on optical bench. Specifications: Dimensions: 250 x 250 mm ² Shaft diameter:10 mm	pcs	4		
167.	Equipment	Object Holder on Stem	Object holder in black metal frame on stem with plug-in frame for diaphragms, filters, diffraction gratings and other objects in slide frame. Includes panels to partially cover the inserted objects. Metal frame: 130 mm dia.	pcs	2		
168.	Equipment	Holder on Stem for Lenses without Frame	Holder with a clamp for mounting frameless lenses. In black metal frame on stem. Holder : 130 mm dia. Aperture: 40 mm dia. Shaft: 10 mm dia	pcs	4		
169.	Equipment	Laser Ray Box (230 V, 50/60Hz)	Laser diode capable of producing up to five parallel rays, for use with related board (U17306). In metal housing with magnetic foil. The number of emerging light beams can be selected electronically via switches. Power is supplied via a plug	pcs	1		
170.	Equipment	Board for Laser Ray Box	Magnetic board for conducting experiments with laser ray box (U17302). With a removable prop for inclining board. Dimensions: 600 x 450 mm ²	pcs	2		



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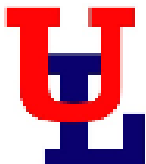
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171.	Equipment	DC Power Supply 20 V, 5 A (230 V, 50/60 Hz)	Universal power supply with digital current and voltage display. Output voltage and output current are continuously adjustable. The device can be used as a constant voltage source with current limiting or as a constant current source with voltage limiting.	pcs	1		
172.	Equipment	Immersion Block Al 50 cm ³	Immersion body of known volume with hook. Can be used in conjunction with scales to determine the density of solid bodies and with a dynamometer for determining buoyancy.	pcs	6		
173.	Equipment	Immersion Block Al 100 cm ³	Immersion body of known volume with hook. Can be used in conjunction with scales to determine the density of solid bodies and with a dynamometer for determining buoyancy.	pcs	6		
174.	Equipment	Immersion Block Fe 50 cm ³	Immersion body of known volume with hook. Can be used in conjunction with scales to determine the density of solid bodies and with a dynamometer for determining buoyancy.	pcs	6		
175.	Equipment	Immersion Block Fe 100 cm ³	Immersion body of known volume with hook. Can be used in conjunction with scales to determine the density of solid bodies and with a dynamometer for determining buoyancy.	pcs	6		
176.	Equipment	Set of 5 Density Bodies	Set comprising five rectangular prisms made of various materials and a transparent block with a hollow body, all with the same dimensions for demonstrating Archimedes' principle. The bodies have 2-mm bores by which they can be suspended	set	2		



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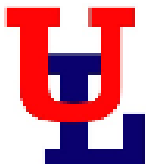
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177.	Equipment	Set of 10 Beakers, 600 ml, Low Form	Borosilicate glass with scale, 100 ml divisions and spout. Set consisting of 10 beakers each.	set	2		
178.	Equipment	Universal Areometer	Areometer for determining the density of liquids in g/ml at a reference temperature of 20°C. Without thermometer, in storage container. Measuring range: 0.7 – 2 g/ml Scale division: 0.02 g/ml Length: 310 mm	pcs	2		
179.	Equipment	Fishing Line, 10 m	Multi-filament braided nylon cord for use in experiments with trolley track. Length: 10 m Diameter: 0.14 mm	roll	2		
180.	Equipment	Cord, 100 m	100 m length of hemp string, black, rolled onto bobbin	roll	3		
181.	Equipment	Digital Callipers, 150 mm	For measuring internal and external dimensions and depth. Tempered stainless steel, LCD display. Including locking screw, adjustment from cm to inch, zero point adjustment in any position, with plastic pouch. Measuring range: 150 mm / 6 inch ...	pcs	1		
182.	Equipment	Photo Gate	Infrared photo gate for triggering the 3B NETlog™ unit (U11300) or a digital counter (U8533341). For time measurements in experiments on free fall, motion on a track or pendulum oscillations and for counting pulses. It can be operated in internal	pcs	1		



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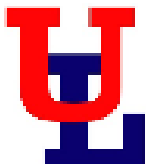
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183.	Equipment	Digital Stopwatch	Stopwatch with 7-digit LCD display in robust plastic casing with start/stop and split/reset buttons for starting and stopping, cumulative, lap-time and dual-time measurement. Includes pendant cord. Specifications:	pcs	6		
184.	Equipment	Mechanical Stopwatch, 15 min	Stopwatch in stainless steel casing with dual dial for minutes and seconds. In pouch with pendant cord. Measuring range: 15 minutes Reading accuracy: 0.1 seconds Diameter: 45 mm	pcs	4		
185.	Equipment	Supplementary Kit "Physical Pendulum"	Versatile set for building a physical pendulum with a moveable weight, a reversing pendulum or a pair of coupled pendulums in a space-saving table-top experiment. Includes components for connecting to dynamometers from Sensors "Mechanical Oscillations ...	pcs	2		
186.	Equipment	Function Generator FG 100 (230 V, 50/60 Hz)	Function generator with external sweep function and power amplifier for use in versatile student and practical experiments covering simple harmonic oscillation, AC electricity and induction. Featuring illuminated, digital display for frequency	pcs	1		
187.	Equipment	Kater's Reversible Pendulum	Experiment Topics: Measurement of periods of oscillation of Kater's reversible pendulum for two fulcra Adjustment of Kater's reversible pendulum for equal periods of oscillation Determination of acceleration due to gravity	pcs	1		



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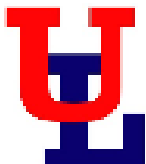
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						USD/\$	USD/\$
188.	Equipment	Set of 4 Pendulum Bobs	4 balls with securing eyes made of brass, aluminum, steel and plastic for constructing a mathematical pendulum. Diameter: 25 mm Weights: 71.2 g, 25.2 g, 61 g, 10.5 g	set	4		
189.	Equipment	Inertia Balance	Inertia balance for determining inertial mass. After the apparatus is calibrated by determining the vibration frequency for objects of known mass, it can be used to determine the unknown masses. The Inertia Balance consists of two metal trays	pcs	2		
190.	Equipment	U-Tube Manometer S	Manometer for measuring pressures in the range 0 to 10 hPa (cm water column). U-tube open on both sides with overflow basin on aluminium base plate with scale. Includes stand rod on the reverse for attaching to stand base. Length of arms:	pcs	1		
191.	Equipment	Surface Tension Ring	Aluminium ring with a blade for determining the surface tension of liquids. Includes a hook and three threads for suspension from a dynamometer. Diameter: 60 mm Weight: 5 g approx	set	2		
192.	Equipment	Resonance Wire, Ring Shaped	For demonstrating the vibration knots in determination of different frequencies. Wire ring with 4 mm plug. Diameter: 290 mm	pcs	1		
193.	Equipment	Wide-Band Loudspeaker	Ideal sound source for acoustics experiments in the frequency range 60 Hz to 23 kHz. Includes connecting lead with 4 mm	pcs	1		



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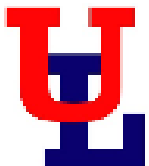
University of Liberia

Monrovia, Liberia

Cell Phones: 077000333 / 0777524513 / 0886 524513

Email : ulchs@ul.edu.lr

No.	Item Type	Item	Description/Specification	Unit	Quantity	Unit Price	Total Price
						USD/\$	USD/\$
			safety plugs. Frequency range: 60 Hz to 23 kHz (-10 dB) Power capacity: 100 W (as per IEC 268-5) Impedance: 4 &Omega				
194.	Equipment	Sound Level Meter P5055	Universally deployable digital meter used to determine the sound level of any number of acoustic sources across a wide sound range. Device is housed in a robust plastic casing with integrated calibration signal and large LCD display for easy	pcs	1		
195.	Equipment	Tuning Fork 21 Hz with Plotter Pen	Tuning fork that allows for plotting oscillations on a sheet of paper. The oscillation is triggered by pushing the prongs of the fork together. The oscillation of the tuning fork is highly visible both with the naked eye or with the aid of	pcs	2		
196.	Equipment	Recording Tuning Fork, c 128 Hz	For demonstrating and recording sound oscillations. For recording the oscillations on a sooted glass plate one of the two prongs is equipped with a metal tip. Complete with a glass plate. Natural frequency: 128 Hz Total length: approx. 280 ...	pcs	2		
197.	Equipment	Striking Hammer, Hard	Aluminium beater particularly suited for striking high-frequency 2000 Hz tuning fork (U10117).	pcs	6		
195.	Equipment	Pair of Tuning Weights	Two tuning weights for changing the frequency of tuning forks for beat experiments; intended for the 440-Hz tuning fork on the resonance box (P1022613).	pcs	4		



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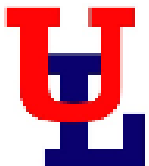
University of Liberia

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						USD/\$	USD/\$
196.	Equipment	Incubator	portable in size	pcs	1		
197.	Equipment	Analytical balance	small sized	pcs	2		
198	Equipment	Biological safety Cabinet	portable size	pcs	2		
199	Equipment	Microwave	-	pcs	1		
200	Equipment	Autoclave	portable	pcs	1		
201	Equipment	Centrifuge	medium size	pcs	2		
202	Equipment	Acid resistant fume hood	medium size	pcs	1		
203	Equipment	Distillation set	-	pcs	10		
204	Equipment	Deep Freezers	medium size	pcs	1		
205	Equipment	Calibrated pipettes	2ml, 5ml, 10ml	pcs	10		
206	Equipment	Beaker	250ml, 500ml	pcs	10		
207	Equipment	Pressure plate	-	pcs	2		
208	Equipment	Pedric discs	-	pcs	100		
209	Equipment	Volumetric flasks	100ml, 250, 500ml	pcs	10		
210	Equipment	Graduated cylinder	100ml, 250, 500ml	pcs	10		
211	Equipment	Disserting trails	-	pcs	2		



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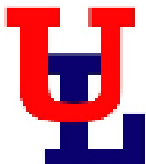
University of Liberia

Monrovia, Liberia

Cell Phones: 0770000333 / 0777524513 / 0886 524513

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						USD/\$	USD/\$
212	Equipment	Emerald22 hematology analyzer; Calibrator and Control	1 set calibrator & 1 set control	pcs	2		
213	Equipment	Sealant for hematocrite		pcs	6		
214	Equipment	Separating funnel 250ml	250ml	ML	2		
215	Equipment	Boiling Chip pack	Pack	Pieces	2		
216	Equipment	Thermometer (-10 to 100C)	(-10 to 100C)	Pieces	6		
217	Equipment	Glass rod (pack)	Pack	Pieces	2		
218	Equipment	PH Paper (Pack)	Pack	Pieces	4		
219	Equipment	Magnetic Stirrer	Pcs	Pieces	2		
220	Equipment	EDTA Tube		Pieces	100		
221	Equipment	Spectrophotometre		Pieces	1		
222	Equipment	Spectrophotometre Curvette		Pieces	4		
223	Equipment	Weighing balance 0.1-500g		Pieces	1		



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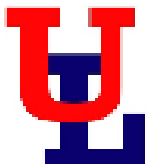
Monrovia, Liberia

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Technical and Financial Offer: Supply of Assorted Chemical & Reagent- Lot -2

No.	Item	Type	Description	Unit	Quantity	Unit price (USD)	total price (USD)
1	Concentrated Ethanol	Chemical/Reagent	1.5 L	L	4		
2	Benedict's reagents	Chemical/Reagent	500ml	ml	2		
3	Sulfuric acid	Chemical/Reagent	98%		2		
4	Hydrochloric acid	Chemical/Reagent	98%		2		
5	ABO blood agents	Chemical/Reagent	set	set	2		
6	Phenolphthalein	Chemical/Reagent	-		4		
7	Gram stained kits & reagents	Chemical/Reagent	set	set	1		
8	Giemsa stain	Chemical/Reagent	set	set	2		
9	Methylene blue	Chemical/Reagent	250ml bottle	ml	4		
10	potassium permanganate	Chemical/Reagent	powder		2		
11	MacConkey agar	Chemical/Reagent	pks	pks	2		
12	Ethylene glycol	Chemical/Reagent	bottle	bottle	2		
13	Nitric acid	Chemical/Reagent	98%		2		
14	Potassium dichromate	Chemical/Reagent	bottle	bottle	2		
15	Ninhydrin reagent	Chemical/Reagent	bottle	bottle	2		
16	Immersion oil	Chemical/Reagent	bottle	bottle	2		
17	Silver Nitrate-100g	Chemical/Reagent	salt lake, solid reagent	pks	5		
18	Hydrochloric acid, HPLC grade (1N) 2.5L	Chemical/Reagent	HPLC grade(1N) 2.5L	Liters	5		
19	Magnesium Ribbon-reel	Chemical/Reagent	reel	reel	5		



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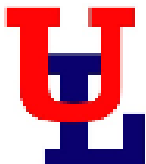
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No.	Item	Type	Description	Unit	Quantity	Unit price (USD)	total price (USD)
20	Potassium Permanganate-500g	Chemical/Reagent	500g reagent	Gram	5		
21	Sodium Hydroxide Pellet-500g	Chemical/Reagent	599g reagent	Gram	5		
22	Starch Soluble, Powder-500g	Chemical/Reagent	500g reagent	Gram	4		
23	Sulfuric Acid 2.5L	Chemical/Reagent	2-5L reagent	Liters	5		
24	Acetic anhydride 500ml	Chemical/Reagent	500mL reagent	ml	5		
25	Methanol Lab grade 500ml	Chemical/Reagent	500mL reagent	ml	15		
26	Ethanol absolute-1l	Chemical/Reagent	1l reagent	Liters	8		
27	Benzaldehyde 1l	Chemical/Reagent	1l reagent	Liters	5		
28	Sodium hydroxide solution (IM)	Chemical/Reagent	1mL reagent	ml	6		
29	Dichloromethane	Chemical/Reagent	250mL reagent	ml	4		
30	Sodium Nitrate per kg	Chemical/Reagent	per kg, reagent	Kg	3		
31	Magnesium turning (5N)	Chemical/Reagent	5N, reagent		4		
32	Anhydrous diethylether 500kg	Chemical/Reagent	500kg, reagent	Kg	3		
33	Calcium Chloride 500g	Chemical/Reagent	500g reagent	Gram	4		
34	Mercury 11 chloride 100g	Chemical/Reagent	100g, reagent	Gram	2		
35	Anhydrous xylene	Chemical/Reagent	500g reagent	Gram	2		
36	Sodium Sulfate	Chemical/Reagent	500g reagent	Gram	2		
37	CuCl ₂ .H ₂ O 500g	Chemical/Reagent	500g reagent	Gram	2		
38	Copper turning 100g	Chemical/Reagent	100g, reagent	Gram	3		
39	Nitric Acid 500ml	Chemical/Reagent	500mL reagent	ml	2		
40	Dragendroll Reagent	Chemical/Reagent	5x500ml	ml	5		
41	N Hexane	Chemical/Reagent	5x500ml	ml	5		



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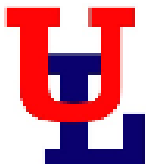
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42	Glycerol	Chemical/Reagent	5x500ml	ml	5		
43	Methanol	Chemical/Reagent	5x500ml	ml	5		
44	Paracetamol Powder	Chemical/Reagent	20g	Gram	1		
45	Amoxicillin	Chemical/Reagent	20g	Gram	1		
46	Ethanol	Chemical/Reagent	5x500ml	ml	5		
47	Hydrogrnperoxide	Chemical/Reagent	5x500ml	ml	5		
48	Giemsa Stain	Chemical/Reagent	1 set	set	1		
49	Rubbing Alcohol	Chemical/Reagent	500ml	ml	1		
50	formaldehyde	Chemical/Reagent	5x500ml	ml	5		
51	Sodium Metabisulfate	Chemical/Reagent	250g	Gram	1		
52	Differential Stain	Chemical/Reagent	500ml	ml	1		
53	Sodium Hydroxide	Chemical/Reagent	500g	Gram	1		
54	Normal Saline	Chemical/Reagent	500ml	ml	1		
55	Chloroform	Chemical/Reagent	500ml	ml	1		
56	Picric acid	Chemical/Reagent	500ml	ml	1		
57	Tannic acid	Chemical/Reagent	500ml	ml	1		
58	Silica gel	Chemical/Reagent	250g	Gram	1		
59	EDTA	Chemical/Reagent	250g	Gram	1		
60	Citric acid	Chemical/Reagent	250g	Gram	1		
61	Acetone	Chemical/Reagent	500ml	ml	1		
62	Methylene Blue	Chemical/Reagent	5x25ml	ml	5		
63	Potassium Hydroxide	Chemical/Reagent	500g	Gram	1		
64	Sodium Bicarbonate	Chemical/Reagent	500g	Gram	1		



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65	Hydrochloric acid	Chemical/Reagent	5x500ml	ml	5		
66	Sealer for Hematocrit	Chemical/Reagent	1pc	pcs	1		
67	Ziehl neelsen	Chemical/Reagent	500ml	ml	1		
68	Potassium Iodate	Chemical/Reagent	250g	Gram	1		
69	Ph paper	Chemical/Reagent	1pk	pkgs	1		
70	Phenol	Chemical/Reagent	25ml	ml	1		
71	Malachite green	Chemical/Reagent	250ml	ml	1		
72	Tri sodium citrate	Chemical/Reagent	250g	Gram	1		
73	Sucrose	Chemical/Reagent	250g	Gram	1		
74	Sulphanilic acid	Chemical/Reagent	250g	Gram	1		
75	Sodium Hypochloride	Chemical/Reagent	100g	Gram	1		