



**TENDER DOCUMENTS
(2018-19)**

(SUPPLY, INSTALLATION, COMMISSIONING AND TESTING OF;

1. LABORATORY EQUIPMENT'S OF PHYSICS DEPARTMENT
2. LABORATORY EQUIPMENT'S OF MICROBIOLOGY
3. LABORATORY EQUIPMENT'S OF BIOCHEMISTRY
4. I.T / OFFICE EQUIPMENTS

**UNDER THE PROJECT TITLED “COMPLETION OF LEFTOVER WORKS ON ACADEMIC BLOCKS AT
HAZARA UNIVERSITY MANSEHRA”**



1. GENERAL

- i. Any bid without 2% earnest money of the total amount will not be entertained.
- ii. Conditional/incomplete/overwritten bid will not be entertained.
- iii. KPPRA rules will be followed strictly in all procurement process.
- iv. The successful bidders will be required to supply the items up-to the end of one year from the date of opening of financial bid(s). The bid can be extended for further period as per KPPRA rules, if both the parties agree.
- v. Telephonic/telexed/faxed/telegraphic quotations will not be entertained.
- vi. The bid must accompany the following:
 - a. Firm Registration Certificate with the Federal/Provincial Government.
 - b. National Tax Number
 - c. Sales Tax Registration Certificate Number.
 - d. Certificate to the effect that they have never been blacklisted by any Government/ Semi Government Organization.
 - e. Dealership Certificate from original manufacturer for Pakistan (where required)
 - f. All bids must be properly sealed.

2. SCOPE OF SUPPLY

The bidder shall supply the items according to the prescribed specifications. Any deviation will cause rejection of the supply order.

3. COST OF BIDDING

The Bidder/Suppliers shall bear all costs associated with the preparation and submission of their respective bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

4. BID PRICE

The bidder shall indicate in his offer, list of items with prescribed specifications, the unit price and total bid prices of the items (Total price must Include transportation, insurance, fixing, placing, demonstration, testing, commissioning and all Government taxes etc). Taxes levied by the Government, if any, shall be recoverable from the bidder as per rules. The Price should be quoted in Pakistani Rupees.

5. BID VALIDITY

The bid should remain valid and open for acceptance of purchase for 90 days from the date of opening of bids. The quoted prices once approved will remain valid for one year from the date of opening of financial bid(s).

6. PERFORMANCE GUARANTEE

The winner of bid shall submit a performance guarantee @10% of the total bid amount in form of demand draft/pay order/Bank Guarantee in favor of Treasurer Hazara University Mansehra.

7. BID SECURITY

Bid security shall be kept sealed in the financial proposal. The bidder(s) are also required to keep an affidavit in the technical proposal stating that a bid security amounting to 2 percent of total amount, without indicating the figure in the letter, has been placed in the financial proposal. Otherwise the technical proposal will be considered non-responsive and will be returned to the bidder(s) after being examined by the University Purchase Committee.

The Bid Securities of the successful Bidders/Suppliers (i-e **only two percent** of quoted bid amount) have a minimum validity period of ninety days from the last date for submission of the Tender or until furnishing of the Performance Security, whichever is later.

The Bid Security may be forfeited;

- (a) If the Bidder/Supplier withdraws his bid; or
- (b) In the case of successful Bidder/Supplier, if he fails within the specified time limit to Sign the Contract Agreement or if he fails to made supply within stipulated time period.

8. PRE-BID MEETING

The Employer may, on his own motion or at the request of any prospective Bidder/Supplier(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. All prospective Bidder/Suppliers or their authorized representatives shall be invited to attend such a pre-bid meeting.

The Bidder/Suppliers are requested to submit questions, if any, in writing so as to reach the Employer/ **7 (Seven) days** prior to the Tender opening date.

Any modification of the Bidding Documents hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer/ exclusively through the issue of an Addendum and not through the minutes of the pre-bid meeting.

Absence at the pre-bid meeting will not be a cause for disqualification of a Bidder/Supplier.

9. BIDS PROPOSAL

- 9.1 The bid should comprise a single package containing two separate envelopes. Each envelop should contain separately the financial proposal and technical proposal. The envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold letters. Initially the technical proposal will be opened whereas the financial proposal will be retained in the custody without being opened.
- 9.2 The committee will evaluate the technical proposals. The Technical proposal not confirming to the requirements of the university will be rejected, the financial proposal of bids found technically non-responsive will be returned un-opened to the respective bidders. Financial proposals of the technically responsive / qualified bidder(s) will be opened publicly at the time, date and venue which will be communicated well in time to the respective bidders.
- 9.3 The stated standard evaluation criteria will be binding upon the bidders and will have no liability, on the University.

Envelop -1(Qualification documents along with Technical Proposal);

To qualify the bidder and ensure Technical Responsiveness of the bid, Envelop-1 containing Qualification documents along with Technical Proposal shall be opened first. To facilitate the evaluation of the same, bidders must submit the following documents in addition to other as mentioned elsewhere in instructions to bidders/bid document;

(a). **Qualification Documents shall comprise;**

- I. Supplier/Vender Company profile (showing Origin, Head Office, Branches, Vision, Mission, Management, Directors, Personals, and other necessary information);
- II. Written power of attorney authorizing the signatory of the bid to act for and on behalf of the Supplier;
- III. Availability of Bank Credit line;
- IV. Bank Statements and financial statements up to the C.F.Y;
- V. Certificate as bidder is Manufacturer or authorized representative of the manufacturer (Where required);
- VI. Experience record regarding in hand and previous contracts; Status of linkages/supplies with/to other Govt. Organizations;
- VII. Organization Chart and CV's of Personal for completion of successful supplies, fixing, demonstration, and after sales service etc.;
- VIII. Copy of registration with Federal Board of Revenue and Excise and Taxation Department.

- (b) **Technical Proposal** shall be furnished taking into account;
- i. To examine whether the supplies offered by the bidder comply with the specifications (Technical Provisions) of the Bidding Documents. For this purpose, the bidders shall provide Technical Proposals in shape of Brochures, Catalogues, Printed Literatures, and other Supporting Documents etc. for comparison with the data prescribed by the Employer in Technical Features/Criteria/Specification.
 - ii. Certificate for providing after sales service. Must be registered with Tax Authorities as per prevailing latest tax rules (Only those companies which are active on sales tax and income tax department and having sound financial strengths can participate);
 - iii. Certificate that participant firm/company has not been blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan (Submission of undertaking on legal stamp paper is mandatory), failing which will cause rejection of the bid
 - iv. Certificate that **Bid Security** has been attached to the financial proposal without showing the amount of bid security.
 - v. Each Bidder/Supplier shall prepare by filling out the forms completely and without alterations one (1) original and 02 number of copies of the documents comprising the bid as described and clearly mark them “ORIGINAL” and ‘COPY” as appropriate. In the event of discrepancy between them, the original shall prevail.

(B) Envelop -II (Financial Proposal)

- a. Dully filled-in Form of Bid, Bill of Quantities along with complete set of bidding documents;
- b. Original form of Bid Security;

10. SIGNING OF BIDS

The person signing the bid shall sign and stamp all the pages of the bid, where entries are made.

11. SUBMISSION OF BIDS

11.1 SEALING AND MARKING OF BIDS

Each Bidder/Supplier shall submit his bid as under:

- (a) Technical and Financial Proposals shall be separately sealed and put in separate envelopes and marked as such.
- (b) The envelopes containing the original and copies will be put (original and each copy of the Bid) in one sealed envelope and addressed as identified in the bid data sheet.

The inner and outer envelopes shall provide a warning not to open before the time and date for bid opening, as specified. In addition to the above the envelope shall indicate the name and address of the

Bidder/Supplier to enable the bid to be returned unopened in case it is declared late. If the envelope is not sealed and marked, the Employer/ will assume no responsibility for the misplacement or premature opening of the Bid.

11.2 DEADLINE FOR SUBMISSION OF BIDS

All bids must reach and be received by the University on or before **Tuesday, February 26, 2019 at 1330 hours**. The bids will be opened at **1430 hours** on the same day in the **conference room**, Hazara University in presence of the bidders or their authorized representatives, who wish to be present.

Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidder/Suppliers shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.

11.3 LATE BIDS

Any bid received by the Employer/ after the deadline for submission of bids will be returned unopened to such Bidder/Supplier. Delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the Bidder/Supplier's responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger.

12. EVALUATION OF BIDS.

Evaluation Committee shall evaluate the bids, in following two stages;

(A) Envelop -I (Qualification Documents along with Technical Proposal).

To determine the eligibility of the bidder for participation in the bidding, the committee will verify the bidder in accordance to the instructions specified hereunder. The Qualification Documents along with Technical Proposals of only eligible bidders shall be evaluated further.

Qualification of the bidders shall be determined in accordance to criteria set herein from the documents submitted by the bidders. Bidder scoring 60% and above marks shall be declared as pass and their financial bids will be opened. A technically eligible bidder, based on conditions listed in this document, not meeting the 60% pass marks limit will be rejected in Technical Evaluation, and its sealed/unopened Financial Proposal shall be returned back. Criteria for qualification of bidders/suppliers shall be;

Technical Proposals of the qualified bidders shall be placed for evaluation. For this purpose, the Brochures, Catalogues, Printed Literatures, and other Supporting Documents etc. submitted by the bidders shall be compared with the data in Technical Features/Criteria/specifications as envisaged in the bidding documents. It is expected that no major deviation/stipulation shall be taken by the bidders; otherwise the proposal shall be rejected.

Envelop -II (Financial Proposal);

Financial proposal of eligible, qualified and technically responsive bidder(s) will further be evaluated by the following steps;

- (i) Required sureties have been furnished,
- (ii) The documents have been properly signed,
- (iii) The Bid is valid till required period,
- (iv) The Bid prices are firm during currency of contract,
- (v) Completion period offered is within specified limits,
- (vi) The Bids are generally in order.

13. CLARIFICATION OF BIDS

To assist in the examination, evaluation and comparison of bids, the Employer/ may, at his discretion, ask any Bidder/Supplier for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the in the evaluation of the bids.

14. AWARD OF CONTRACT

The Employer/ will award the Contract to the Bidders/Suppliers whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such Bidders/Suppliers has been determined to be Eligible, Qualified and Technically Responsive.

15. EMPLOYER'S/S RIGHT TO VARY QUANTITIES

Employer reserve the right at the time of award of contract to increase or decrease the quantities mentioned in the Bill of Quantities without any change in the unit price or other terms and conditions.

16. EMPLOYER/S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

The University reserves the right to accept or reject any or all tenders fully or partially as per provision available under Rule-47 of the Khyber Pakhtunkhwa Public Procurement of Goods, Works and Services Rules, 2014 and invoke Rule-48 of the said Rules for re-bidding. The University reserve the right to cancel all the bids were quoted price exceed estimated cost / or market value as per provision available under Rule-47.

17. NOTIFICATION OF AWARD

Prior to expiration of the period of bid validity prescribed by the Employer/, the Employer/ will notify the successful Bidder/Supplier in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer/ will pay the Contractor in consideration of the execution of the contract and completion of the Supplies by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").

No Negotiation with the Bidder/Supplier having evaluated as lowest responsive or any other Bidder/Supplier Shall be permitted, however, Employer/ may have clarification meetings to get clarify any item in the bid evaluation report.

The notification of award and its acceptance by the Bidders/Suppliers will constitute the formation of the Contract, binding the Employer/ and the Bidder/Supplier till signing of the formal Contract Agreement. Upon notification of award and its acceptance by the Bidders/Suppliers, the Employer/ will promptly notify the other Bidder/Suppliers that their Bids have been unsuccessful and return their bid securities.

18. SIGNING OF CONTRACT AGREEMENT

The formal Agreement between the Employer and the successful Bidders/Suppliers shall be executed as per instructions of tender documents within 14 days of the receipt of the Contract Agreement by the successful Bidder/Supplier from the Employer.

19. GENERAL PERFORMANCE OF THE BIDDER/SUPPLIERS

The Employer/ reserve the right to obtain information regarding performance of the Bidder/Suppliers on their previously awarded contracts/Supplies. The Employer/ may in case of consistent poor performance of any Bidder/Supplier as reported by the Employer/s of the previously awarded contracts, interalia, reject his bid. The Employer/ with its rules, procedures and relevant laws of the land take shall such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder/Supplier and debarring him from participation in future bidding.

20. RETENTION MONEY

The percentage of retention money is 10% of the amount and will be release after successfully lapse of warranty / defect liability period from the effective date of taking over certificate.

21. UNIVERSITY'S RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS

The University reserves the right to accept or reject any or all tenders fully or partially on the recommendation of technical committee/ purchase committee.

22. CANVASSING

Unsolicited advice / clarifications and any personal approached at any stage of evaluations of bids are strictly prohibited and may lead to disqualification.

23. DELIVERY

The bidders shall make delivery of the items within 30 days from the date of issuance of supply order. A penalty of 1% of the item price per day subject to the maximum of 10% of the total amount would be charged after expiry of the delivery time till the supply of the items.

24. MODE OF PAYMENT

No advance payment will be made as per Government rules. The payment will be made to the supplier after inspection of supplied items by a committee of experts constituted by the University. If found in

order in all respects after the successful and complete supply, installation and functioning of the items, the retention money will be released after successfully laps of warranty / defective period.

25. TAXES

All Government taxes shall be deducted in accordance with relevant Government rules.

26. ARBITRATION

The decision of the University in all relevant matters will be final and unchallengeable in any court of law anywhere.

27. SPECIAL CONDITIONS OF THE CONTRACT

1. Inspection of Equipments/materials.

All Equipment's /materials shall be subject to inspection and shall be approved by Hazara University Purchase committee/Technical Committee before the same are fabricated or installed in position. The committee may reject such materials as are considered by him to be below standard specifications, size or quality. The Contractor shall provide all labour at his own expense for handling during inspection. Any materials rejected by the committee shall not be used and shall be removed from site by the Contractor.

2. Work to be opened for inspection.

All supply/works under or during the course of execution in pursuance of the Contractor, whether at site or at Contractor's workshop shall, all times, be opened for inspection and supervision of the Hazara University Purchase committee/Technical Committee at all times during the usual working hours, the contractor should either himself be present to receive the instructions or any responsible agent duly accredited in writing, present for this purpose. Instructions given to the Contractor's agent should be considered to have the same force as if these had been given to the Contractor himself.

3. Responsibility against damages

Before and up to the whole of the Supply/works are completed and have been finally handed over to the University and a proper completion certificate thereof obtained by the Contractor, the Contractor shall be responsible for all and any damage caused to the materials or installed works/equipments thorough accident, improper handling, transport or any other cause whatsoever and shall repair, remove or replace the same and compensate the University against all such losses.

4. Specifications

The work shall comply with the requirement/ specification laid down in the B.O.Q of the tender. Quality of each item should be supreme quality.

5. Laboratory Test

The Hazara University Purchase committee/Technical Committee has the power to order for conducting Equipments/material quality assurance test which he deems necessary and cost of such tests will be borne by the contractor. No claim in this regard will be entertained for payment.

6. **Warranty / Guarantee**

The warranty and guarantee period for all product must be atleast one years or higher on all product. All the supplies must be recently manufactured, must bear the dates of manufacturing and expiry. All the equipment must meet the requirements of the Technical Specification and arrange for collection or destruction of any defective Equipment. The Employer shall have the right to make claims of defective items under the warranty period for replacement on supplier's cost. The retention money will be forfeited if supplier failed to remove defect or replacement of items.

28. Special / Mandatory Conditions

- Refurbished, Grey smuggled or international warranty products will not be accepted in any case.
- Hazara University will verify the serial numbers of the supplied items with its manufacturer. If found ambiguous, will be returned at supplier own cost.
- Manufacturer's Authorization Letter will be provided by the bidder in the name of Hazara University. The same shall be verified with the Manufacturer / issuing authority.
- Quoted product must have at least one manufacture's parts depot in Pakistan, for rapid warranty claims.
- Any product inferior to the given specification / University requirement shall be disqualified straight away.
- Compliance sheet must be provided by the bidder along with the quotation
- The successful bidders will be required to supply the items as per maximum required quantity of University up-to the end of one year from the date of opening of financial bid(s).
- Hazara University shall only accept the branded equipment imported through proper channel.

TECHNICAL EVALUATION CRITERIA

Sr.#	Technical Evaluation Criteria	(Millions)	Points	Remarks
1	Worth (PKR) of projects of similar Nature (Completed) with Government / Semi Government in last 05 years (Max Points 16)	3-7	02 points per project up to max 08	Bidder(s) are required to attaché Work completion certificate
		Above 7	02 points per project up to max 08	
2	Worth (PKR) of projects of similar nature in hand with Government / Semi Government in last 05 years (Max Points 12)	3-7	02 points per project up to max 06	Bidder(s) are required to attaché award letters / work order of projects in hand
		Above 7	02 points per project up to max 06	
3	Authorization certificate / document /from the principal / manufacturer (Max Points 04)		04	
4	Undertaking of “No Blacklist certificate” on legal stamp paper. (Max Points 04)		04	
5	Certificate that Bid Security has been attached to the financial proposal without showing the amount of bid security. (Max Points 04)		04	
6	Compliance of qualification documents (Max Points 10)		10	
7	Full Compliance to the technical Specifications of Laboratories equipment’s/any other to be procured. (PKR 100) (Max Points 50)		50	

TOTAL TECHNICAL EVALUATION MARKS = 100

TECHNICAL EVALUATION PASSING MARKS = 65

LAB EQUIPMENT ITEMS WITH TECHNICAL SPECIFICATION

FOR DEPARTMENT OF PHYSICS (S. No 01 to 58)

BILL OF QUANTITIES

S. No	Description of Item	Specification	Unit	Qty	Unit Price	Total Amount (PKR)
1	Optical Microscope	40X-2000X Simul-Focal Compound Microscope + 5MP Digital Camera	Number	1		
2	Programmable Spin Coater	(SCS 6800 Spin Coater Series) Should allow for the uniform application of photoresists, polyimides, metal-organics, dopants, silica films and most organic and aqueous solutions to planar substrates	Number	1		
3	Electrical Furnace (up to 1200° C)	Features a heating range from 60°C to 1200°C (212°F to 2192°F) Chamber offering 120 or 350 cubic inches (0.006 m ³ or 0.002 m ³) of heating space	Number	1		
4	Digital Library Balance (Precession balance)	With accuracy of 0.0001 mg	Number	1		
5	Hot Plates	coated, stainless steel tops Flat, white working surface ensures heat transfer Temperature range for heating models: from ambient +5°C to 500°C	Number	2		
6	Helium-Neon Laser (5mW output power)	HNL050RB – Cylindrical He-Ne Laser, 632.8 nm, 5 mW, Random, 100 - 240 VAC Power Supply Included and also having a built-in interlock circuit	Number	1		
7	Nexus Optical Breadboard	Nexus Breadboard, 750 mm x 900 mm x 60 mm, M6 x 1.0 Mounting Holes <ul style="list-style-type: none"> • Thickness: 60 mm (2.4") • 1/2" (12.5 mm) Hole Border for Maximum Usable Area • ±0.1 mm (±0.004") Surface Flatness over any 1 m² (11 ft²) Area • 5 mm Stainless Steel Top and Bottom Skins with All-Steel Side Panels • Steel-to-Steel Bonding Throughout Increases Thermal Stability 	Number	1		
8	Advanced Spectrometer Kit (EDU-SPEA 1/M)	Basic Educational Spectrometer Kit which can perform the following experiments Study the Spectral Makeup of Various User-Provided Light Sources Basic Kit Includes Parts for a Grating-Based Spectrometer .Advanced Kit Includes Parts for Grating- and Prism-Based Spectrometers	Number	1		

9	Dual Channel Digital Oscilloscope	Bandwidth 100MHz Channels 2 Up to 1 GS/s sampling rate	Number	1		
10	Compact Power and Energy Meter	<ul style="list-style-type: none"> • Handheld Digital Power Meter Console • Designed for Coherent and Incoherent Light Source Measurements • Power and Energy Measurements for CW and Pulsed Source Detection • External 2 GB SD Memory Card for Storing and Transferring Data • USB 2.0 Interface • Long-Life Internal Li-Polymer Battery • Optical Power range: 100pW- 200W • Optical energy range: 3 micro Joule – 15 Joule 	Number	1		
11	Optical Post Assemblies 1" Length	<ul style="list-style-type: none"> • Standard 1/2" Post Holders • 1/4"-20 (M6) Tapped Hole on Bottom 	Number	10		
12	Optical Post Assemblies 2" Length	<ul style="list-style-type: none"> • Standard 1/2" Post Holders • 1/4"-20 (M6) Tapped Hole on Bottom 	Number	10		
13	Optical Post Assemblies 3" Length	<ul style="list-style-type: none"> • Standard 1/2" Post Holders • 1/4"-20 (M6) Tapped Hole on Bottom 	Number	10		
14	Optical Post Assemblies 4" Length	<ul style="list-style-type: none"> • Standard 1/2" Post Holders • 1/4"-20 (M6) Tapped Hole on Bottom 	Number	10		
15	Optical Table Clamps CL5 and CL5A	CL5 and CL5A: General-Purpose Clamps	Number	50		
16	Optical Table Clamps CL2	CL2: Heavy-Duty Clamp with Adjustable Height	Number	20		
17	Precision Kinematic Mirror Mounts 1/2" optics	Kinematics mounts for Optics High-Precession Differential Adjuster	Number	08		
18	Precision Kinematic Mirror Mounts 1" optics	Kinematics mounts for Optics High-Precession Differential Adjuster	Number	08		
19	Precision Kinematic Mirror Mounts 2" optics	Kinematics mounts for Optics High-Precession Differential Adjuster	Number	08		
20	Precision Kinematic Mirror Mounts 3" optics	Kinematics mounts for Optics High-Precession Differential Adjuster	Number	08		
21	Precision Kinematic Mirror Mounts 4" optics	Kinematics mounts for Optics High-Precession Differential Adjuster	Number	08		
22	M6 cap Screws 1/4" long	Stainless Steel	Number	20		
23	M6 cap Screws 3/4" long	Stainless Steel	Number	25		
24	M6 cap Screws 6mm long	Stainless Steel	Number	15		
25	M6 cap Screws 12mm long	Stainless Steel	Number	15		

26	M6 cap Screws 20mm long	Stainless Steel	Number	15		
27	Lens Mount 1/2"	Internally SM-Threaded Maximum optic thickness 0.6" (4mm)	Number	5		
28	Lens Mount 1"	Internally SM-Threaded Maximum optic thickness 0.6" (4 mm)	Number	5		
29	Lens Mount 2"	Internally SM-Threaded Maximum optic thickness 0.6" (4 mm)	Number	5		
30	Mirrors 1/2"	Broadband Dielectric Mirrors, $R_{avg} > 99\%$ for S- and P- Polarizations Wavelength range 400-750 nm, 750-1100 nm	Number	5		
31	Mirrors 1"	Broadband Dielectric Mirrors, $R_{avg} > 99\%$ for S- and P- Polarizations Wavelength range 400-750 nm, 750-1100 nm	Number	5		
32	Mirrors 2"	Broadband Dielectric Mirrors, $R_{avg} > 99\%$ for S- and P- Polarizations Wavelength range 400-750 nm, 750-1100 nm	Number	5		
33	Lenses 9mm uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
34	Lenses 9mm AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
35	Lenses 1/2" uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
36	Lenses 1/2" AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
37	Lenses 18mm uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
38	Lenses 18mm AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
39	Lenses 25mm uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
40	Lenses 25mm AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
41	Lenses 1" uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
42	Lenses 1" AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		

43	Lenses 30mm uncoated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
44	Lenses 30mm AR coated	Plano-convex lenses have a positive focal length, uncoated and AR coated for visible range. Focal lengths from 10-100 mm	1 each of focal lengths 10, 20, 40, 60, 80	5		
45	Cube Beam Splitters	Broad band AR coated faces for 400-700 nm Broadband beamsplitter coating on internal diagonal surface 1" (25.4 mm) cubes with 10:90 and 50:50 split ratio	Number	2		
46	Neutral Density Filters 1/2"	Optical densities ranging from 0.1 to 8.0 Ideal for low power applications (<1 W)	Number	3		
47	Neutral Density Filters 2"	Optical densities ranging from 0.1 to 8.0 Ideal for low power applications (<1 W)	Number	3		
48	Optical Chopper System with MC1F10HP 10/100 Slot (36°) Chopper Blade, 230 VAC Power Cord	Microprocessor Controlled Single and Dual Frequency Blades Chopping Frequency with various blades 4 Hz-10 KHz	Number	1		
49	Dual Phase Lock in Amplifier	Frequency range: 0.5 Hz to 100 KHz Current and voltage inputs Up to 80 dB dynamic reserve Internal reference oscillator	Number	1		
50	Ultrasonic Bath	Model No. Lauda aqua line 5 Capacity: 5 liter	Number	1		
51	Hot Plate with Magnetic Stirrer	Hot plate with Magnetic Stirrer (Max Temp: 500 C and Speed 1500 rpm) Model No. C-Mag-H7	Number	1		
52	Bench Top Centrifuge	Bench top Centrifuge with max 10000 rpm and 6*20 ml, 10 ml	Number	1		
53	Hydrothermal Autoclaves (100 ml)	Hot plate with Magnetic Stirrer (Max Temp: 500 C and Speed 1500 rpm) Model No. C-Mag-H7	Number	2		
54	Hydrothermal Autoclaves (150 ml)	Hot plate with Magnetic Stirrer (Max Temp: 500 C and Speed 1500 rpm) Model No. C-Mag-H7	Number	2		
55	Mortar and Pestle 130 ml	Porcelain mortar and pestle set Capacity 130 ml	Number	1		
56	Mortar and Pestle 320 ml	Porcelain mortar and pestle set Capacity 320 ml	Number	1		

57	OPVCells Characterisation (Spectrophotometer)	Specord 200 Plus 190(UV/Vis)-1100nm, 1.4nm bandwidth, scanning, dual beam, for general applications, single cell holder	Number	1		
58	Kiethly (2420) IV characterisation setup for solar cells	instrument offering four-quadrant precision voltage and current source/load coupled. Instrument which can measure current from 10 fA to 10 A pulse and/or voltage from 100nV to 200V, for 1000W pulse and 100W DC total power <input type="checkbox"/> Source Meter Function: Current/Resistance/Voltage Measure, Current/Voltage Source <input type="checkbox"/> Output Power: 20W <input type="checkbox"/> Source Voltage Range: $\pm 200\text{mV}$ to $\pm 200\text{V}$ Source Current Range: $\pm 1\mu\text{A}$ to $\pm 1\text{A}$ <input type="checkbox"/> Resistance Measurement Range: 0.2 ohm to 200 Mohm	Number	1		
Grand Total Amount in words (Physics Department)						
Grand Total Amount in figures (Physics Department):						

**LAB EQUIPMENT ITEMS WITH TECHNICAL SPECIFICATION
FOR DEPARTMENT OF MICROBIOLOGY (From S. No 59 to 87)**

BILL OF QUANTITIES

S. No	Item	Specification	Quantity	Unit Price	Total Amount
59	Inverted/stereo microscope + Desktop PC	<ul style="list-style-type: none"> • Viewing head: Trinocular Head Inclined at 30°, Interpupillary distance 48-75mm • Eyepiece: High point extra wide field eyepiece EW10X/22 • Objective: Infinite plan objective <ul style="list-style-type: none"> 4X/0.1,WD18mm 10X/0.25,WD10mm 20X/0.4,WD5.1mm 40X/0.6,WD2.6mm • Infinite plan phase objective PH10X/0.25, WD10mm • Centering: Centering Telescope (Φ30mm) • Phase Annulus: 10X-20X,40X Pre-adjustable phase annulus plate • 10X-20X,40X Adjustable phase annulus plate • Illumination: Halogen lamp 6V/30W • Filter: Diameter 5mm, Blue, Green, and frosted glass • Accessories: Inverted Fluorescent Attachment Video Adapter with C mount <p>CAMERA</p> <ul style="list-style-type: none"> • Can record still image and videos • High resolution camera with C-mount • At least 5 mega pixels, high resolution camera • USB connectivity • Camera based on CMOS technology • Video frame rate 25fps or higher • With software for image editing <p>PC</p> <ul style="list-style-type: none"> • Separate Core i7 Desktop PC to analyse and capture slide figures 	2		
60	Mechanical Convection Ovens	<ul style="list-style-type: none"> • 230VAC • Temperature range ambient 10-250 oC • Chamber Dimentions: aprox W48 x H52 x D41 cm • Capacity: 3.6 cubic feet • Digital LED readout temperature display • Control Type: Microprocessor • Forced air convection with noiseless fan 	5		

		<ul style="list-style-type: none"> • Corrosion resistant sheath heating element • Stainless steel interior and powder coated steel exterior • Foamed silicon rubber door gasket 			
61.	Incubator	<ul style="list-style-type: none"> • Natural Convection Model • 230VAC • Temperature range: 20-75oC, Resolution 1 oC • Capacity: 8.6 cubic feet (240Litre) • Inner Chamber Dimensions: Approx. W80 x H60 x D50 cm • Shelf positions 5, at least two shelves included • Disinfection routine up to 100oC • Display: Digital LED • Stainless steel interior, coated-steel exterior • Ideally two inner and two outer doors 	2		
62	CO2 Incubator	<ul style="list-style-type: none"> • Direct heat CO2 incubator² • 230VAC • Intuitive Control • CO2 range: 0-20% • Temperature range: 20-50% • Minimum Capacity 80L • Inner Dimensions: Minimum W50 x H55 x D60 cm • Shelves positions: At least 6 • Shelves included: at least 3 	2		
63	Bench pH meter(with Accessories)	<ul style="list-style-type: none"> • Water proof multipara meter tester • pH range: 0-14 • Temperature range: -5 to 90oC • Battery controlled • Display: 4 digit LCD 	5		
64	Centrifuges	<ul style="list-style-type: none"> • High centrifugation speed up to 20,800 x g (14,000 rpm) for molecular applications in tubes from 0.2 to 250 mL • With optional 4 x 250 mL swing-bucket rotor for flexibility • Temperature range from -9°C to 40°C, with Fast Temp function for rapid cooling of the centrifuge chamber • Automatic rotor recognition and imbalance detection for maximum operational safety 	2		
65	Refrigerated Centrifuge	<ul style="list-style-type: none"> • Equipped with a temperature management system and cooling features. • 24 slots with 1.5/2.0 mL capacity rotor • Rotor with lid Speed up to 16,100 x g (13,200 rpm) 	2		

		<ul style="list-style-type: none"> • Temperature range from 0°C to 40°C Should Maintains constant 4°C at maximum speed 			
66	Freezer (-20°C) (vertical)	<ul style="list-style-type: none"> • Temperature range: Down to -20 oC • Capacity: Minimum 700L (24 cu ft) • Interior chamber dimensions approx. W70 x H195 x D90 cm 	1		
67	Refrigerator (vertical)	<ul style="list-style-type: none"> • Temperature range: 2-7 0C • Capacity: Minimum 700L (24 cu ft) • Interior chamber dimensions: approx.. W70 x H195 x D90 cm 	1		
68	Ice Machine	<ul style="list-style-type: none"> • 30kg / 24 h nominal capacity at:20°C air and 15°C water • Dimensions (W x D x H)400 x 500 x 713 mm • CabinetInside / outside stainless steel 1.4301 • Storage Capacity10kg • Ambient air temperature: 5°C to 42°C 	1		
69	Gel Electrophoresis Apparatus	<ul style="list-style-type: none"> • COMPLETE SYSTEM: Unit including ONE electrophoresis system + ONE gel maker set (4 combs, 1 large tray, 2 small trays, 1 gel casting stand) • With Timer and input up to 220 V 	2		
70	Compound Microscope (with LCD Display and Camera)	<ul style="list-style-type: none"> • Total Magnification: 40x, 100x, 400x, 1000x (Phase contrast) • Stage Dimensions: 140 x 140 mm • Head: Binocular • Illuminator: 3W LED variable • Imaging Sensor: 5 Megapixel still image; 1Mega Pixel video clips • Output: USB RCA, SD card 	2		
71	Shaking Incubators	<ul style="list-style-type: none"> • Orbit size: approx. 2cm • Temperature range: 20-80 oC • Platform capacity: 6-10 x 2L flasks • LED Display • Timer: 1 min to 999h • Stainless steel interior, Durable steel exterior 	2		
72	Thermocycler	<ul style="list-style-type: none"> • Capacity: 96x0.2mL+77x0.5ml • Temp range: 0°C-99.9°C(Rt≤30°C) 	2		

		<ul style="list-style-type: none"> • Max cooling rate: ≥ 3.5 Celsius degree/s • Max heating rate: ≥ 4.0 Celsius degree/s • Heating/cooling rate: 0.1°C/s-4 Celsius degree/s (Adjustable) • Heated lid temp: 30°C-110 Celsius degree • Accuracy: $\leq \pm 0.1$ Celsius degree • Gradient temp range: 30°C-99 Celsius degree • Temp control: block, tube, calculated • Display: 5.7inch,320*240pels LCD • Stored program No. 200 • Max. No. of Cycle 99 • Display 5.7inch,320*240pixels LCD • Communication USB2.0 , Rs232 			
73	Gel Documentation System	<ul style="list-style-type: none"> • Features 2.0 MP scientific grade CCD camera, extendable resolution to 6.0 MP, with manual or motorized zoom lens to capture publication quality pictures • Dak8rkroom designed with UV blocking gel viewing window • Emission filters and four-position filter wheel with an additional ethidium bromide filter • Transilluminator positioned on accessible roll-out tray • Epi White Lights for lighting and focusing on top of cabinet • Software to provide live previews and capturing of images 	1		
74	Pipettes (adjustable) five different ranges 1. 0.5-10 ul 2. 2-20 ul 3. 10-100 ul 4. 20-200 ul 5.100-1000	<ul style="list-style-type: none"> • Conventional pipette with tip ejector • Autoclavable 	1		
75	Water Bath (Shaking)	<ul style="list-style-type: none"> • Temperature range: Ambient $+5^{\circ}\text{C}$ ~ 99°C • Integrated precision temperature control within $\pm 0.1^{\circ}\text{C}$ • Reciprocal shaking motion from 20 ~ 120 rpm • Stroke length of 25 mm • Dual digital LED display PV and SV value and selection of temperature, speed and time display • Temperature and shaking controlled together or 	1		

		<p>independently with wait-off timer</p> <ul style="list-style-type: none"> • Adjustable acceleration and reduction speed rate • Corrosion resistant seamless stainless steel, internal bath gabled lid • Over temperature cut-off, electrical leakage breaker • Integrated Digital Control • Controller Display: Dual 4 Digit LED Display • Safety Device: Over Temp. Cut-off / Electrical Circuit Breaker • Electrical Requirement: 220 VAC 50/60 Hz • Capacity: 30 L 			
76	Water Distillation unit	<ul style="list-style-type: none"> • Output 4 litres/hr, single distilled • pH 5.0 – 6.5 • Conductivity, $\mu\text{Scm-1}$ 3.0 – 4.0 • Resistivity, mOhm-cm 0.25 – 0.3 • Temperature 25 - 35°C • Pyrogen content * Pyrogen free • Water supply 1 litre/min • Electricity supply 220 or 240V • single phase 	1		
77	Heat Block	<ul style="list-style-type: none"> • Dry block heater to provide uniform, stable heating with a temperature range of 10–200°C. • Single block with heat-and-stir capability. • Advanced internal temperature sensing with temperature accuracy and control • Temperature deviation adjustment • Timer to accurately monitor the heating time • 220V input 	1		
78	Sonicator	<ul style="list-style-type: none"> • Ultrasonic Homogenizer / ultrasonicator/ultrasonic processor Operating Frequency :20-22 KHZ Input power :100 -240V, 50 - 60Hz Programmable Timer: 0-999 minutes ; Crusher capacity:0.5-1800 ml (expansion available with continuous flow system) • Microtube holder up to 2-8 samples (0.1-2ml) can be treated simultaneously. • Continuous cell flow expanding processor capacity up to 10L • Ultrasonic Homogenizer / ultrasonicator/ultrasonic processor 	1		

		<ul style="list-style-type: none"> • FULL AMPLITUDE CONTROL • PROGRAMMABILITY: Parameters including processing times, pulse on/off and power output, it can be saved to memory and run by the touch of a button. • Adjustable pulse On and Off times to reduce the heat gain in temperature sensitive samples. • AUTO TUNING • TEMPERATURE MONITORING 			
79	Biological safety cabinet	<ul style="list-style-type: none"> • Class II Biological Safety Cabinet • 2 ULPA filters to deliver ISO Class 3 air cleanliness • Standards complied (AS1386 .5, EN 1822, EN12469, EN61010-1, IEC61010-1, IEST-RP-CC001.3, IEST-RP-CC007, IEST-RP-CC-034.1, ISO 14644.1, JIS B9920, UL - 61010-1, CAN / CSA - C22-2 No. 61010-1) • Airflow Velocity (Inflow) 0.45(m/s) /90(fpm) • Airflow Velocity (Downflow) 0.30(m/s) /60(fpm) • Dimensions (Minimum): • External dimensions (1300 x 700 x 1300), Internal dimensions: (1200 x 500 x 600) Electrical: 220-240V,AC, 50Hz 	1		
80	Orbital shaker	<ul style="list-style-type: none"> • Unit able to run in cold room, • incubators and CO2 environment from 0 to 40°C, maximum 80% relative humidity, non-condensing. 220V, 40 to 300 rpm 	1		
81	Autoclave	<ul style="list-style-type: none"> • Top-loading, fully automatic, stand-alone, microprocessor-controlled, programmable, built-in steam generator, 220VA power rating, • lid opening upward • Programmable auto-start for initiating a cycle up to 1 k8week later • Dual-sensing lid interlock to prevent lid opening when chamber is pressurized or when temperature exceeds 97°C • Automatic air purging by a microprocessor to prevent over-pressurization during a cycle • One-touch lever to easily open and close chamber lid • Programmable rate of steam exhaust • Door-closure sensor • In-process display which shows status and progress of 	1		

		<p>sterilization cycle</p> <ul style="list-style-type: none"> • Sterilization timer • Agar melting mode for rapidly melting agar and maintaining it at liquid temperature, or for a hot and faster start-up • Operating Range 105°C to 135°C • Display Range 5°C to 137°C • Warming Range 45°C to 60°C • Gauge Pressure • Operating Range 3 to 29 PSI (0.2 to 2.0 kg/cm) • Sterilization 1 to 250 minutes • Dimensions • Overall (W x D x H) (26 x 25 x 39.4) in • (66 x 65 x 100) cm • Chamber Capacity approx. 85 liters 			
82	Multichannel Electronic Pipette (Electronic)	<ul style="list-style-type: none"> • 8 tips • Range: 100ul-1200ul • Minimum draw: 100ul • Maximum draw: 250ul 	2		
83	Multichannel Pipette (Manual)	<ul style="list-style-type: none"> • 8 tips • Range: 10ul-200ul • Minimum draw: 10ul • Maximum draw: 200ul 	2		
84	ELISA Microplate Reader + Desktop PC + Printer	<ul style="list-style-type: none"> • Absorbance range: 400-800nm • Read speed: 96 wells in approx. 15 sec • Light source: Tungsten halogen bulb • Filter arrangement: 5 cavity wheel • Default configuration 405, 450, 492, 630 nm and can install upto 10 filters • On board software featuring curve fitting, cut off calculation • Display: atleast 8 inch colour LCD screen that displays entire ELISA plate board information • Separate Core i5 Desktop PC for analyzing results • Separate wifi enable laser jet printer for printing results 	1		
85	Spectrophotometer + Desktop PC	<ul style="list-style-type: none"> • Optical system: Double beam • Scan speed: selectable • Wavelength range: 190-1100nm • Spectral Bandwidth: 0.5, 1.0, 2.0, 5.0nm • Photometric mode: Transmittance, Absorbance, Energy concentration 	1		

		<ul style="list-style-type: none"> • Photometric range: -0.3-3.0Abs • Stray Light: $\leq 0.12\%T$ (220nm NaI, 340nm NaNO₂) • Standard functionality: Photometric, Quantitative, Spectrum and DNA measurement • Dtector: Silicon photo diode • Light source: Tungsten Halogen and Deuterium arc lamp • Digital Display • Software support • 230VAC • Separate Core i5 Desktop PC for analysing results 			
86	UV Lamp	UV Lamped for safety cabinet	1		
87	Freeze Dryer	Temperature of condenser -55° or -85°C Capacity up to 5 kg Stainless Steel cabinet With Defrost (Gas) with temperature and preserve controls Data Transfer Port Power 220 V	1		
Grand Total Amount (PKR) in words (Micro Biology Department)					
Grand Total Amount (PKR) in Figures (Micro Biology Department):					

LAB EQUIPMENT ITEMS WITH TECHNICAL SPECIFICATION

FOR DEPARTMENT OF BIOCHEMISTRY (S. No 88 to 107)

BILL OF QUANTITIES

S. No	Item	Specification	Qty	Unit Price	Total Amount (PKR)
88	pH Meter	<p>pH/Temperature Laboratory Bench Meter</p> <ul style="list-style-type: none"> • Automatic Temperature Compensation (ATC) for good accuracy under fluctuating temperatures • Easy to read large custom LCD • Easy and Quick Push-button Calibration • 7 memorized buffers (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01 and 12.45) for calibration • Messages on the LCD to make the calibration easy and accurate • User-selectable "calibration time out" to remind when anew calibration is necessary • Stability Indicator prompts whenever reading stabilizes. <p>Technical Specifications</p> <p>Range</p> <p>pH -2.00 to 16.00 pH</p> <p>Temp -20.0 to 120.0°C / -4.0 to 248.0°F</p> <p>Resolution</p> <p>pH 0.01 pH</p> <p>Temp 0.1°C (0.1 °F)</p> <p>Accuracy</p> <p>pH ±0.01 pH</p> <p>Temp ±0.4°C / ±0.8°F</p> <p>Typical EMC Deviation</p> <p>pH ±0.02 pH</p> <p>Temp ±0.4°C / ±0.8°F</p> <p>pH Automatic Calibration 1 or 2 point-calibration, with 7 memorized buffers</p> <p>Offset Calibration ±1 pH</p> <p>Slope Calibration from 80 to 108%</p> <p>Temperature Compensation automatic, from -20.0 to 120.0°C / -4.0 to 248.0°F or manual, without temperature probe</p> <p>Complete unit as above, Operated on 220Volts</p>	2		
89	Electronic analytical Balance	<p>Electronic Analytical Balance Digital Microprocessor Controlled with Latest UniBlock Technology, UniBlock designs replaces 70 parts of Electromagnetic balances and ensures stable results.</p> <p>Technical Specification:</p> <p>Weighting Capacity: 220gm</p> <p>Minimum display: 0.1mg</p> <p>Pan size (mm): Ø91 approx.</p> <p>Extra Feature: Overload Protection</p> <p>Features:</p> <p>Automatic calibration by pressing keys with internal calibration weight</p> <ul style="list-style-type: none"> • Easy setting, expanded piece counting function comparator function, formulation modes • Windows direct communication function, send balance data to excel without any data software with optional RS232C interface. • Operated on 220Volts 	2		

90	Gel Electrophoresis Horizontal	<p align="center">Horizontal Gel Electrophoresis System</p> <p>Compact S is designed for the fast separation of low to middle numbers of samples in mini and standard gel formats.</p> <ul style="list-style-type: none"> • Gel casting system S: Casting chamber for gel tray 8.2 cm x 10.5 cm • Four loading stripes, adhesive in red/green/yellow each, for gel tray • UV transparent gel trays • Unique gel casting tank • Both models differ in the size of the included gel tray. The chamber compatibility with both gel trays provides great versatility to respond to different or changing application tasks. <ul style="list-style-type: none"> • The range of nine different combs inclusive four multichannel pipet compatible combs meets all needs. Rubber feet reliably prevent the chambers from slipping on the bench. • Unique gel casting tanks make gel casting a matter of seconds. • Technical Specifications Gel size: 8.2 cm x 10.5 cm (S) <p>Max Sample number: 48 with 3 combs</p> <p>COMPACT S:</p> <p>Comb Thickness(mm) Number of Wells Volume per Well (µl)</p> <p>1.5 prep.1 + 2 marker lanes 342 + 30</p> <p>8, MTP, 9 mm spacing 45 11 30 13 24</p> <p>16, MTP, 4.5 mm spacing 18</p> <p>Buffer Vol. : 360 ml</p>	2		
91	Gel Electrophoresis Vertical	<p>Vertical Gel Electrophoresis for protein & DNA electrodes able to make and runs two gels simultaneously. Error free transparent lid design, unique anti-leakage casting system, easy removal of gel sandwich, Maximum gel size 10 x 8cm, gel thickness 1.0 mm, buffer volume internal 250-300ml, and buffer volume external 500 ml, gel tank dimension: 20 x 13 x 16.5cm. Injection moulded unit, compact design, complete unit includes Electrophoresis tank, electrode module 1set for 2 gels casting module 2-set, glass plates 5-sets, 1.00mm spacer 4-Nos., 1.00 mm 10 teeth combs 2-Nos., one gel plate, alignment card, glass plate separator and instruction manual.</p>	2		
92	Gel Electrophoresis power supply	<p>Electrophoresis Power Supply, compact, space saving & light weight design, touch panel, audible & visible alarm, status alarm, constant voltage or current, safety features includes, no load detection, over voltage protection, automatic recovery after power failure, dimension 320x240x73mm, digital voltage range 10 – 300V in 1 Volt step, current 4–400 mA in 1mA steps 75 Watt max, design 4 parallel outputs, with timer control 0–999minute, operated on 220 Volts.</p>	4		
93	Shaking incubator	<p>Orbital Shaking Incubator refrigerated front opening noiseless with powerful induction motor, microprocessor temperature controlled with digital display, working temperature range: 10°C to 60°C, set accuracy ± 0.1 °C shaking speed 20 – 300 rpm, Interior : Stainless Steel (SUS304) shaking orbit 20mm, shaking setting & display digital, shaking timer 99hr and 59 minute, temperature setting & display digital, PID temperature controlled, interior chamber dimension 545 x 550 x 360mm, capacity to hold different flasks i.e. 250ml 23-Nos or 500ml 16-Nos or 1000ml 9-Nos, Safety: over temperature cut-off, over current breaker Complete unit, operated on 220 Volts.</p>	1		
94	Gel Documentation & Analysis System	<p align="center">Gel Documentation & Analysis System Ingenius</p> <p>When simplicity and budget matter.</p> <p>The InGenius Gel documentation and analysis system is compact, easy to use and offers an affordable route to gel</p> <p>Capture and Analysis. Using many of the features found on the higher specification Syngene products, the In Genius makes a simple but sophisticated system for any laboratory.</p> <p align="center">InGenius3 is the perfect choice for low budget Gel</p> <p>Documentation and analysis fluorescence applications. It features a compact darkroom which has a sliding front door and an internal LED white light. InGenius3 has a 3m pixel camera and can produce images with 16 bit image depth. A manual zoom lens and manual filter drawer (includes a UV filter) completes the package. The system is controlled by the new GeneSys Software</p> <p>Analysis software :</p> <p>GeneTools analysis software</p> <p>Icon driven - with full analysis using 2 buttons in less than 10 seconds Single Window</p>	1		

display of all data, images, and histogram simultaneously Multiple experiments, Zoom control, Automatic track, band and edge finding with manual override Automatic detection and correction for distorted tracks and grimaced or curved bands, Single band/track data, Molecular weight/base pair, Rf, quantity determination, Automatic/manual marker assign Cross gel track profiling (ability to overlay track histograms from different gels) Colony counting (with coloured colonies) Automatic spot/blot analysis with full distortion detection Image contrast/brightness adjustment User editing of Libraries. Automatic 1D gel, Colony counting, Slot blot, Elisa plate analysis Direct link to Excel, Automatic Band matching.

Automatic image analysis software Features:-

Band analysis/densitometry
Ideal for 1D analysis, the software has automatic lane and peak detection. GeneTools software automatically compensates for smiling or distorted bands and tracks. Molecular weight or base pair values can be calculated using standards from one or more tracks. Quantification can also be automatically calculated from standards in a number of ways. Detailed results can be instantly printed or transferred to Word or Excel.

Band matching
Band matching can be performed by position, defined Rf or calibrated molecular weight/base pair value.

Automatic molecular weight/base pair calculations for sample bands based on standards from one or more lanes
GeneTools has a library of markers for automatic or manual assignment which are user configurable.

Multi-tier analysis for high throughput screening
Especially useful for analysing high throughput gels ,GeneTools software provides multi-well line functions with automatic track alignment.

Manual band quantification
The user can manually quantify bands, spots or other objects on a sample. All data is instantly exportable to Microsoft Excel.

Spot Blot analysis
Automatic detection of spots using a spot grid, quantitative and incidence analysis. The software can also perform multiple background subtraction methods.

Colony counting
Automatic counting of two colour colonies with the ability to count light and dark colonies on the same plate

Export results to Microsoft Excel and Word
Customised results tables can be exported to either Microsoft Word or Excel

CAMERACCD Digital camera

- 3m pixels
- USB2 connection

LENS Superior zoom lens for exceptional image quality

FILTER DRAWER Use a range of filters for extensive choice of fluorescent applications

SAFETY SWITCH Protects from accidental UV exposure when opening door

INTERNAL LED WHITE LIGHT For sample positioning and focusing

Specification: -

Camera

Sensor	1/3 inch
Resolution	3 million pixels
Bit depth	12/16bit (extended)
Greyscales	4096/65536
Dynamic range	3.6/48 (extended)
Viewing area	20x20cm
Excitation Source	Trans UV 302nm peak
Flat Fielding:	yes

Illumination

		UV transilluminator 20 x 20cm White Epi overhead Yes Complete with Gene Sys Image Software & Gene Tools Software With Computer.			
95	Autoclave	<p>Autoclave with fully-automated process for easy & quick control.</p> <p>Feature:-</p> <ul style="list-style-type: none"> - Time for sterilization can be easily adjusted by user-friendly control system. - When setting time for sterilization ends up, buzzer sound comes with automatic exhaust of steam inside the equipment. - The advanced dual safety system makes optimized protection against any kind of dangerous factors which may be caused by excessive upturn of temperature & pressure. - High-efficiency Over-Temperature Limit function fulfill reliable protection against overheating above a set temperature. - User-friendly control panel enables end-users to take a look at both setting & present temperature. - When it comes up to a end-user's setting temperature for sterilization, the timer is automatically activated and both operating temperature & progress time of sterilization temperature are shown on the display for easy monitoring. - The safety devices present effective protection functions against overheating and over current. - Easy & quick operation with the completely-isolated structure from the outside of the equipment. <p>Technical Specifications: -</p> <p>Temperature: Range: Amb.+10°C to 125°C Controller: Digital PID controller (Program type: 5 pattern 18 segment)</p> <p>Capacity: 40 l</p> <p>Dimensions(in) ø300 x 650mm</p> <p>Display: PV & SV Dual Digital display</p> <p>Timer: 99hr 59min 59sec</p> <p>Pressure Gauge: 0 ~ 3 kg/cm²</p> <p>Operating Pressure: 1.2 kg/cm² at 121°C (Degrees of Celcius)</p> <p>Door packing: One Touch pressure Handle type</p> <p>Safety Device: Over Temperature, Over pressure & Over Current protector</p> <p>Basket: Standard wire Basket</p> <p>Power Supply: AC 230V, 50/60Hz</p> <p>Complete Unit as above.</p>	1		
96	Centrifuge	<p>High Speed Refrigerated Centrifuge Machine</p> <p>230 V 50 Hz, maintenance free brush-less motor with a speed range of 18000 rpm universal speed range, microcontroller with automatic rotor identification, LCD-Display for the preselection of all centrifuge arameters 10 each curves of acceleration and deceleration, simple starting, Temperature</p>	1		

control range -20 to +40°C, with built in time, display, range 0 – 99hr or infinite, Operated on 220 Volts, Model Z326K, Hermle Made in Germany.

Special Features:

Distinct Control Panel

- Simple one handed operation
- Easy to program with gloves on
- Splash proof digital display
- Permanent indication of Preset and Actual Values
- Selection of speed in both rpm and g-force, with increments of 10
- 10 acceleration and 10 deceleration rates, Possibility of unbraked deceleration
- Preselection of the temperature from - 20°C to 40°C with 1°C increments
- Indication of the sample temperature
- Pre-cooling program option
- Standstill cooling
- Pre-selection of running time from 10 sec to 99h 59min or continuous
- Storage of up to ninety runs incl. rotor type
- Quick-key for short runs
- Diagnostic program

Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and -cut off (rotor specific)
- Imbalance tolerant drive
- CFC free refrigeration system
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 1010
- Audible signal at the end of each run with several melody options
- Rotor exchange is easy to handle
- Noise level under 60 dBA at max. speed

Complete operated on 220 Volts, Model Z326K, Hermle

Made in Germany

1-No.Angle Rotor capacity 6 x 85 ml speed 13500 rpm

With adaptors of 50 & 15ml falcon tubes

1-No. Angle rotor Capacity 24 x 1.5ml

97	Minicentrifuge	<p><u>Distinct onto Panel</u></p> <ul style="list-style-type: none"> ➤ Control panel with touch-operation ➤ Permanent indication of pre-set and actual value ➤ Selection of speed in both rpm and g-force ➤ Pre-selection of the running time, from 10s to 99h 59min or continuous ➤ Storage of up to 99 runs ➤ Quick-key for short runs <p>Technical Data</p> <p>Max speed 13,500 rpm</p> <p>Max RCF 17,317 xg</p> <p>Max Volume 24x1.5/2.0 ml</p> <p>Speed range 200-13,500 rpm</p> <p>Running time 59min 50s / 10 s increments 99 h 59 min /1min</p> <p style="padding-left: 40px;">Increment</p> <ul style="list-style-type: none"> • Angle Rotor capacity 24x1.5ml Speed 1330rpm complete with above Rotor operated on 220Volt 	1		
98	Spectrophotometer dual beam	<p><u>Scanning Spectrophotometer UV/Vis.</u></p> <p>Fully symmetrical, Double Beam System, Modified Czerny-Turner design using 1200 L/mm Holographic Diffraction Grating, automatic self-test and calibration at switch on,</p> <p>Specification:</p> <p>Wavelength range and accuracy: 190 – 900nm; 0.5nm</p> <p>Wavelength Reproducibility: 0.1nm</p> <p>Wavelength Readout: Digital display on screen.</p> <p>Wavelength Selection: By GOTO Key and keypad entry.</p> <p>Optical Bandwidth: 1.8nm.</p> <p>Stray Light: Less than 0.02% at 220nm, NaI; and 0.02% at 340nm, NaNO₂.</p> <p>Display Screen: Large backlit LCD displays spectra, Menus, data, operator prompts and Instrument status.</p> <p>Autozero: Automatic by press button.</p> <p>Photometric Readout: Digital display of A, %T and C on screen.</p> <p>Photometric Accuracy: ±0.004A at 1A.</p> <p>Photometric Noise: Less than ±0.0001A at 550nm.</p> <p>Baseline: Stored in safe memory.</p> <p>Baseline Flatness: ±0.0001A (300nm/min, 200-900nm)</p> <p>Baseline Stability: Better than ±0.000A/hour</p> <p>Computer Interface: Bi-directional RS 232c.</p> <p>Scan Speeds: 1-4000nm/min.</p> <p>Wavelength Scale Expansions: 1-100nm/cm.</p> <p>Fitted with cell holders with 2 UV Cells and 2 Glass Cells, Operated on 220 Volts.</p>	1		
99	Rotary evaporator	<p><u>Rotary Evaporator Digital Easy to read large digital</u></p> <p>LCD screen displays heating, Temperature, rotation speed and Timing, Speed range from 20 to 280rpm & Large 5L water-oil heating bath with heating temperature with precise temperature control and adjustable Motorized lift with quick-action, automatic release evaporating Flasks to top position in case of power failure, Chemical-resistant double PTFE system and patented pressure Spring provide excellent sealing.</p>	1		

		<p><u>Technical Specification</u></p> <p>Speed range: 20-280rpm</p> <p>Temperature range: Ambient +5 to 180 c</p> <p>Heat control accuracy: +1c</p> <p>Heat output: 1300W</p> <p>Lift stroke: 150mm</p> <p>Timer range: 1-99mins</p> <p>Reversible motor: Yes</p> <p>Motor type: DC brushless</p> <p>Including vertical condenser 1000ml evaporating flask and 1000ml Receiving flasks operated on 220 volts</p>			
100	Basic Microscope	<p>Microscope Binocular</p> <p>Feature:- Great assistant in biological field Comfortable observation with adjustable eyepoint height Interpupillary distance</p> <p>Specification:-</p> <p>Objectives Achromatic 4X, 10X, 40X and 100X</p> <p>Stage Mechanical stage 132x142mm / 75x 40mm</p> <p>Eye Pieces WF 10X / 18</p> <p>Viewing Head Inclined at 30°, Interpupillary Distance 48 – 75mm</p> <p>Condenser Abbe NA 1.25 with Iris Diaphragm & filter with standard accessories operated on 220 Volts, Built in LED Light</p>	2		
101	Pipette	<p>Gilson Micro pipettes Adjustable built to last constructed of stainless steel and PVDF with unique dry seal technology thick body robust accurate and precise individually calibrated, Tip Holders and Tip Ejectors are fully Autocleavable, Up to 50% deduction of pipetting and purge forces Ranges as follows: -</p> <p>a) Measuring Range 0.2 to 10µl, 1-200 µl, 0.5-5ml, Accuracy ±0.014µl,</p>	3		
102	PCR	<p><u>Thermal Cycler PCR PEOSTAR</u></p> <p>With Touchsensitive TFT Display (1/4 VGA, Graphic, 16 Colors), 96 Well, Universal Block for 96x0.2ml Tubes, 90 Well PCR Plates or 48x0.5ml Tube with Flat Caps.</p> <p><u>Technical Specifications:</u></p> <p>6 Powerful Peltier elements with Long Life Technology</p> <p>6 Control circuits with PT 1000 thermal probes</p> <p>Max. heating and cooling rate: 5 °C /s</p> <p>Block uniformity (at 72 °C): +/-0.25 °C</p> <p>Temperature range thermoblock : 4 to 105 °C</p> <p>Regulating accuracy: +/- 0.1 °C</p> <p>Adjustable ramping: 0.1 to 2.0 °C/s</p> <p>Increment/decrement time: 0:01 to 9:59 minutes</p> <p>Increment/decrement temperature: 0.1 to 9.9 °C</p> <p>Temperature range heatable lid: 70 to 120 °C</p> <p>Programmable lid locking</p> <p>4 x USB, 1 x Ethernet port CMS Windows)</p> <p>Power Supply: 90-260 V AC, 50-60 Hz,</p> <p>Power Consumption: 850VA</p> <p>Internal Memory for 1000 Typical PCR Protocols in Unlimited, Self-created Directories / Subfolders</p>	2		

		<p>Internal Memory for 1000 Typical PCR Protocols in Unlimited, Self-created Directories / Subfolders</p> <p>PC Software for Convenient creation of PCR Programs in the Office.</p> <p>Up to 99 Steps per Program</p> <p>Password Protected user Accounts with Flexible Access Rights</p> <p>Quick-start Function for the last Program executed</p> <p>Auto-restart after power failure.</p> <p>Features</p> <p>Quickest running times - greatest life time</p> <p>Highest precision - in all areas</p> <p>Simple to use - powerful to command</p> <p>Fastest ramping without overshoots</p> <p>Constant self-diagnostic temperature display</p> <p>Complete system.</p>			
103	Vertex	<p>Vortex Mixer</p> <p>Vibrating motion continuously analog dial speed control Electronic speed regulation 0 – 3000 rpm</p> <p>Vibration orbit 4.5 mm,</p> <p>operating mode: touch, continuous , high stability,</p> <p>Operated on 220 Volts.</p>	1		
104	Laminar Flow	<p>Laminar Flow Cabinet Horizontal</p> <ul style="list-style-type: none"> • Space-saving desk-top type with compact design • Open type large air exhaust area for airflow uniformity • SUS304 working area • Adjustable fan unit & one-button velocity selection • High efficiency & low power consumption <p>Technical Specifications:</p> <p>Exterior Dimensions 1220*650*920 (W x D x H (mm))</p> <p>Work Zone Dimensions</p> <p>Work Zone Height 40 (cm)</p> <p>Controller Switch</p> <p>Blower AT Blower</p> <p>Main Power Switch Yes</p> <p>Foot-pad Yes</p> <p>Noise dB(A) <65</p> <p>HEPA Filter H13,≥99.99% (@≥0.3μm)</p> <p>Operated on 220 Volts</p>	1		

105	Microplate Titer Readers	<p align="center"><u>MICRO PLATE READERS</u></p> <p>The EZ Read 400 is a simple and robust micro plate reader that is an ideal Choice for laboratories which require a workhorse instrument for their routine absorbance assays. The EZ Read 400 is available in two applications-focussed models: EZ Read 400 ELISA is a dedicated ELISA reader, the EZ Read 400Research offers versatility by extending its applications capacity to measuring Total protein, cell proliferation assays as well ELISA assays. The EZ Read 400 Micro plate readers are PC-controlled using new, intuitive Galapagos software Created by Biochrom to simplify data acquisition and analysis.</p> <p>Features EZ Read 400 ELISA</p> <ul style="list-style-type: none"> • Measures flat, round and v-bottomed 96-well micro plates and strip wells with standard ANSI SBS footprints are measured • Accurate measurements ensured by automatic lamp calibration prior to each reading • USB 2.0 PC connection <p>Technical Specification</p> <table border="0"> <tr> <td>Lamp Source</td> <td>Tungsten Halogen</td> </tr> <tr> <td>Measurement Range</td> <td>0-3.3 OD</td> </tr> <tr> <td>Reproducibility/Precision</td> <td>0.25% at 1.0 OD at 450 nm</td> </tr> <tr> <td>Accuracy</td> <td>0.5% at 1.0 OD at 450 nm</td> </tr> <tr> <td>Standard Filters</td> <td>405, 450, 492, 620 nm</td> </tr> <tr> <td>Wavelength Selection</td> <td>Filters</td> </tr> <tr> <td>Wavelength Range</td> <td>400-750nm</td> </tr> <tr> <td>Plate Types</td> <td>flat, round and v-bottomed 96-well plates</td> </tr> <tr> <td>Data Output</td> <td>Export to PC</td> </tr> <tr> <td>Detection System</td> <td>Single channel silicon photodiode</td> </tr> <tr> <td>Reading Speed</td> <td>25 seconds</td> </tr> </table> <p align="right">Linearity 0.25% 0.0025 OD from 0.1 -2.5 OD at 492</p> <table border="0"> <tr> <td>Computer Interface</td> <td>USB 2.0</td> </tr> <tr> <td>Optical System</td> <td>Filters</td> </tr> <tr> <td>Mode of Operation</td> <td>PC Control</td> </tr> <tr> <td>Analysis Software</td> <td>Galapagos Software only</td> </tr> </table> <p>Operated on 220 Volts with Computer</p>	Lamp Source	Tungsten Halogen	Measurement Range	0-3.3 OD	Reproducibility/Precision	0.25% at 1.0 OD at 450 nm	Accuracy	0.5% at 1.0 OD at 450 nm	Standard Filters	405, 450, 492, 620 nm	Wavelength Selection	Filters	Wavelength Range	400-750nm	Plate Types	flat, round and v-bottomed 96-well plates	Data Output	Export to PC	Detection System	Single channel silicon photodiode	Reading Speed	25 seconds	Computer Interface	USB 2.0	Optical System	Filters	Mode of Operation	PC Control	Analysis Software	Galapagos Software only	1		
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106	Freezer -20C	<p align="center"><u>Biomedical Freezer (Upright type) Direct Cooling</u></p> <p>Panasonic's MDF-U334 Biomedical Upright Freezer offers the outstanding reliability and performance, required in a wide variety of storage and research applications. The Panasonic MDF-U334 is a small easy-to-use compact (274 litres) -30°C biomedical upright freezer for stable storage at high room temperatures.</p> <p>Features</p> <ul style="list-style-type: none"> • Easy-to-use, compact upright model • Microprocessor digital temperature display • Convenient storage drawers for efficient storage and preventing cold air leakage • Front-mounted display/control panel (with new microprocessor) located at convenient waist height • After a power outage, operation resumes at pre-outage settings (non-volatile memory for temperature and alarm temperature settings) • High/low temperature alarm ($\pm 5^{\circ}\text{C}$ to $\pm 15^{\circ}\text{C}$, adjustable) • Power failure alarm • Breaker switch turns power off in event of over current abnormality <p>Specification</p> <table border="0"> <tr> <td>Interior Dimension:</td> <td>490(W) x 485(D) x 1290(H)</td> </tr> <tr> <td>Capacity:</td> <td>274 litres / 9.7 cu.ft.</td> </tr> <tr> <td>Cooling range:</td> <td>-20°C to -30°C</td> </tr> <tr> <td>Baskets:</td> <td>4 Large, 1 small</td> </tr> <tr> <td>Insulation:</td> <td>HCFC-Free polyurethane formed-in-place</td> </tr> <tr> <td>Alarm system:</td> <td>High/low temperature alarm (adjustable), Power failure, Remote alarm contact</td> </tr> <tr> <td>Calibration:</td> <td>Zero adjustment via control panel</td> </tr> <tr> <td>Accessories:</td> <td>Set of key, 1 scraper, 4 containers holders and baskets</td> </tr> </table>	Interior Dimension:	490(W) x 485(D) x 1290(H)	Capacity:	274 litres / 9.7 cu.ft.	Cooling range:	-20°C to -30°C	Baskets:	4 Large, 1 small	Insulation:	HCFC-Free polyurethane formed-in-place	Alarm system:	High/low temperature alarm (adjustable), Power failure, Remote alarm contact	Calibration:	Zero adjustment via control panel	Accessories:	Set of key, 1 scraper, 4 containers holders and baskets	1																
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107	FUME HOOD	<p>Feature</p> <ul style="list-style-type: none"> • Tri wall construction and chain and sprocket sash system for maximum robustness • Unplasticised polyvinyl chloride exhaust collar ensures chemical resistance • Polycarbonate sash to prevent etching • When sash raised above 457 mm (18"), sash will automatically and gently fall back to the safe level. • Baffle system to rapidly draws contaminant out of the fume hood and thermal heat relief is achieved • Service fixtures include: 1 x water fixture, 1 x gas fixture, 4 single electrical outlets with splash proof over and 1PP drip cup. <p>Nominal Size 1.8 meter(6')</p> <p>External Dimensions Fume Hood unit only 1830 x 900x 1400mm (72.0"x 35.4" 55.1")</p> <p style="padding-left: 100px;">With Exhaust Collar 1830x900x1460mm (72.0"x 35.4" 57")</p> <p style="padding-left: 100px;">With fully opened Sash 1.5 meter (5')</p> <p>Internal Dimensions (WxDxH) 1220x900x1400mm (48.0"x35.4"x55.1")</p> <table border="1" data-bbox="406 638 1168 1388"> <tr> <td rowspan="3">Construction</td> <td>Main Body</td> <td>Electrogalvanized steel with Epoxy polyester hybrid Isocide powder coating</td> </tr> <tr> <td>Internal Liner</td> <td>Unplasticised polyvinylchloride</td> </tr> <tr> <td>Worktop (Default)</td> <td>Unplasticised polyvinylchloride or Polypropylene</td> </tr> <tr> <td rowspan="4">Sash Specification</td> <td>Sash Material</td> <td>Polycarbonate</td> </tr> <tr> <td>Sash Configuration</td> <td>Vertical or Combination</td> </tr> <tr> <td>Sloping</td> <td>5°</td> </tr> <tr> <td>Maximum Sash Opening</td> <td>740 mm (29.1")</td> </tr> <tr> <td>Accessories</td> <td colspan="2"> <ul style="list-style-type: none"> • Fume Hoods include 1 water and 1 gas, remote controlled fixture plumbed to the top of the hood and outlets standard. <ul style="list-style-type: none"> Electrical Outlets Airflow Alarm Kit Distillation Grids • Base Cabinet <ul style="list-style-type: none"> Hood Circuit protection • Ventilation Kit <ul style="list-style-type: none"> Ventilates base cabinet utilizing the hood exhaust system. Field installed. <ul style="list-style-type: none"> • Filler Panel <p>One set of filler panels required per continous row of hoods Field installed</p> <ul style="list-style-type: none"> • Special Flammable and Corrosive storage Cabinets </td> </tr> </table>	Construction	Main Body	Electrogalvanized steel with Epoxy polyester hybrid Isocide powder coating	Internal Liner	Unplasticised polyvinylchloride	Worktop (Default)	Unplasticised polyvinylchloride or Polypropylene	Sash Specification	Sash Material	Polycarbonate	Sash Configuration	Vertical or Combination	Sloping	5°	Maximum Sash Opening	740 mm (29.1")	Accessories	<ul style="list-style-type: none"> • Fume Hoods include 1 water and 1 gas, remote controlled fixture plumbed to the top of the hood and outlets standard. <ul style="list-style-type: none"> Electrical Outlets Airflow Alarm Kit Distillation Grids • Base Cabinet <ul style="list-style-type: none"> Hood Circuit protection • Ventilation Kit <ul style="list-style-type: none"> Ventilates base cabinet utilizing the hood exhaust system. Field installed. <ul style="list-style-type: none"> • Filler Panel <p>One set of filler panels required per continous row of hoods Field installed</p> <ul style="list-style-type: none"> • Special Flammable and Corrosive storage Cabinets 				
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BILL OF QUANTITIES

SUPPLY, INSTALLATION, COMMISSIONING AND TESTING OF IT/OFFICE EQUIPMENT (S.108 to 113)

S. No	Description	Qty	Unit Rate	Amount
108	Desktop PC: HP/DELL OR Equivalent Core i5 7th Gen, 8GB DDR4 Ram, 1TB HDD, 2GB Graphic Card	2		
109	Laptops: HP/DELL or Equivalent 17.3 Inch FHD intel Core i5 7200U 3.1 GHz processor, 8GB RAM, 1TB HDD, dual band 802.11ac, 42 WHr battery, 3 years warranty with security braket (as approved by the committee)	155		
110	Multimedia: Projector with 4000 Lumens or higher, lcd technology, Network, VGA and HDMI in, lamp life 5000 hours, XGA with ceiling mount kit and additional 15 meter HDMI cable	20		
111	LaserJet Printer: 40 PPM, Duplex and Network Desktop Printer: Laser black & white printer with Ethernet, and USB ports. (Also mention the cost of toner and no of pages per tonner)	30		
112	Photocopy Machine: Type. Desktop Heavy Duty Digital Copier, Twin laser beam scanning and Electro-photographic printing. Scanning & Printing at 600*600*1200(Twain) dpi, Copying speed 30cpm. Warm up time 15 seconds. First copy 4.2sec. Zoom range 25% to 400%. Scan once print many. Standard Memory 1.5GB Ram + 250 GBHDD	8		
113	43" Industrial Grade LCD for CCTV monitoring: Philiphs/Brenz or Equivalent 43"TFT-LED Panel size, 1920×1080 Resolution	4		
GRAND TOTAL AMOUNT (PKR) IN WORDS (IT/OFFICE EQUIPMENT)				
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Bidder's Sign and Stamp