



Tender No. 16/2022

Bidding Documents

SPECIAL INSTRUCTIONS

- No Cutting erasing is allowed in the Tender bid.
- Bid offered strictly in accordance with the bid document will only be accepted.
- Only typed bid will be accepted (no hand written)
- Bid Security will be accepted in the form of CDR (Call Deposit Receipt)

THIS IS FOR STRICT COMPLIANCE, FAILING WHICH THE RESPECTIVE BID SHALL STAND CANCELLED

Contact Address:

**Assistant Treasurer/Incharge Purchase Cell
Cholistan University of Veterinary and Animal Sciences,
Near DHA Bahawalpur
Tel: 062-9255718,731**



TECHNICAL PROPOSAL

TENDER NO. 16/2022

TERMS & CONDITIONS

1. The price of this tender document is Rs.1,500/- (Non-Refundable)
2. The Tender complete in all respect along with 2% Bid Security of Estimated Price / Cost in the shape of only "Call Deposit Receipt" (CDR) in favor of "Treasurer, CUVAS", Bahawalpur should reach in Treasurer office by **23-12-2022** at **11:00 AM** in the Cholistan University of Veterinary & Animal Sciences, Bahawalpur.
- 3.

Lot No.	Description	Bid Security (Rs.M)
01	Department of Veterinary Anatomy and Histology Department/Section of Veterinary Physiology Department/Section of Biochemistry Department/Section of Veterinary Pharmacology Department/Section of Veterinary Microbiology	0.1871
02	Veterinary Parasitology Veterinary Pathology Department/Section of Veterinary Medicine Department/Section of Veterinary Surgery	0.2001
03	Department/Section of Animal Reproduction	0.272
04	Department/Section of Animal Nutrition Department/Section of Poultry Husbandry/Science Department/Section of Livestock Management Department/Section of Livestock Products Technology and Dairy Technology Department of Meat Technology	0.2792

4. The Technical proposals will be opened on 23-12-2022 at 11:30 a.m. in Administration Block, Treasurer Office, Meeting Room, 1st Floor, Cholistan University of Veterinary and Animal Sciences, Bahawalpur.
5. The offered price should be inclusive of all taxes.
6. The rate must be quoted only in Pakistani Rupees.
7. Quoted rates must be valid for 90 days.
8. No offer shall be considered if it is:
 - a) Submitted without Tender Document.
 - b) Submitted without Bid Security money.
 - c) Received after the date and time fixed for the receipt of tenders.
 - d) Is unsigned.
 - e) Is ambiguous.
 - f) Is conditional.
 - g) Is given by the firm black listed, suspended or removed from the approved list by any Government, Semi Government, Autonomous Bodies or other firm.
 - h) Is received by Telegram.
 - i) Is received with a validity period shorter than the required in the tender enquiry.
 - j) Does not confirm to general conditions of the enquiry i.e it is not accompanied by sample or manufacturers literature where required.
 - k) for store materially and substantially different from that required in the tender enquiry.
9. 10% amount as performance security will be deducted from the bills of the firms at the time of payment of total of the supply order which will be retained, for at least three months after delivery of Items mentioned above or till the warranty period which ever will be later, by the Treasurer CUVAS Bahawalpur. In case of non-warranty items performance guarantee/security will be refunded/released after three months subject to the satisfactory report from the end user.
10. The sample may be provided as & when required by Technical Committee.
11. Applicable Govt. levies will be deducted at source from the bill.
12. The equipment / stores supplied by the bidder shall be brand new, in original manufacturer packing and complete in all respects. Cost of transportation of supplied equipment / goods to the site of university and cost of installation and commissioning of equipment shall be the responsibility of the supplier.

13. Supply of material should be made within stipulated period of the Purchase Order positively; in case of failure the amount of CDR may forfeited and purchase will be made at the risk and cost of the defaulter or any penalty as decided by the purchase committee of the University can also be imposed.
14. The buyer shall notify the supplier in writing/through telephone of any defects that occur during the warranty period. On receipt of such notification/telephonic message the supplier shall attend the breakdown call within a maximum of 6 working hours.
15. The firm offering prices for supply of machinery and equipment should have sufficient qualified technical staff and be equipped and having capability to undertake the maintenance or replacement for the equipment supplied to this University.
16. The successful venders will attach the stamp duty of 0.25% or Rs. 1200/- (whichever is greater) of total value of the contract / purchase order at the time of signing of contract.
17. The bidding documents should be dropped in Tender Box in the office of the treasurer, 1st Floor, CUVAS, Bahawalpur, during five working days till the last date mentioned in tender notice.
18. Bids must be quoted on company's letter pad duly signed stamped by the bidder
19. Please attach NTN, GST and professional tax certificates with bidding documents.
20. Please attach the copy of your FBR Active taxpayer serial Number list for the current financial year.
21. Please read, sign all the tender documents, terms and conditions carefully and attached with your bidding documents.
22. Any further information if required can be obtained from Purchase Cell, CUVAS, Bahawalpur.
23. In case the contractor fails to execute the contract satisfactorily, the amount of security shall be forfeited. The security shall be released after satisfactory completion of the contract on production of report to the effect issued by the committee constituted for the purpose and expiry of successful warranty period.
24. On finding substandard quality or lower specification as and when noticed during process, the security deposited shall be forfeited in favor of the CUVAS Bahawalpur. The purchaser also reserves the right to purchase the material from elsewhere without any notice at the risk and cost of the defaulting contractor.
25. All pages of the tender document should be signed and stamped by the bidder.
26. CUVAS reserves the right to decrease /increase the quantity without consultation as and when required as per requirement and available budget.
27. CUVAS may ask the lowest bidder for any clarification/providing of documents for satisfactory evaluation of offer.
28. The payment shall be subject to the satisfaction of all items duly certified by the inspection committee/end user. Findings of the inspection committee will be binding on the supplier.
29. Quantity of Items can be increased or decreased (Fully or Partially) at the time of issuance of Purchase / Supply Order keeping in view the budgetary provision or any other reason thereof.

We, M/s. _____ hereby certify that we have read and agreed with all terms and conditions mentioned above.

Signature: _____

Designation: _____

Dated: _____

Stamp: _____

Assistant Treasurer/
 Incharge Purchase Cell
 Cholistan University of Veterinary and Animal
 Sciences, near DHA, Bahawalpur
 Tel: 062-9255718, 131

TENDER DOCUMENTS

LABORATORY EQUIPMENT

LOT No. 1

Lot #	Name of item	Qty	Specifications	Origin/Make
Department of Veterinary Anatomy and Histology				
1	Rib cutter	3	Packing 1 Quantity Per Pack 1 Finishing MAT Automation Grade Manual Material Grade 410 Material Steel Is It Portable Portable Finish MAT Grade 410 Sterilization YES	Local/China
2	Rib shear	3	Low maintenance Robust structure Excellent strength User friendly Simple design Enhanced durability	Local/China
3	Rotary Microtome with accessories	1	Section Thickness 0.5-60 µm Total Horizontal specimen feed: 25mm Vertical specimen stroke; 59mm Microtome Razor Stainless Steel Specimen orientation XY- ±8 Power Source Electricity/manual Accessories All accessories, 200 Microtome S.S blades	Germany/Equivalent
4	Automatic knife processor	1	Usage: Knife sharpening machine Brand: well-reputed Type: Automatic Grinding Material: Metal	China/Local
5	Hone with surfaces	1	Hone length capacity (power stroke) 305 mm Honing speed (general) 80 & 160 Rpm Honing speed (with inverter) step less 0 to 160 Rpm Max Cylinder block length 1000 mm Electric motor 2 hp (3 phase) Stroking speed 0-60 SPM	China/Local
6	Stropping leather	2	Use for sharpening of lab instruments	China/Local
7	Hollow organs (animal models)	1	Canine torso model with complete organs	Advanced countries
8	Dissection microscopes	1	Magnification Zoom objective 7X-45X Eyepiece Optional Eyepiece 15X/15mm, 20X/10mm, 25X/9mm, 30X/8mm	Advanced countries

			<p>Main Body Binocular head, 45° inclined, 360° rotatable, can be locked in any position desired.</p> <p>Objective 0.7X-4.5X stereo zoom; Zoom Ratio:6.4:1</p> <p>Focusing Mount Focusing mount with vertical working distance 50mm</p> <p>Stand Vertical Post: 240mm ; Diameter: φ32mm; With φ95mm B/W Plastic & Perspex Plate and Paired Clips; Base Size: 200x255x60mm</p> <p>Illumination Transmitted and reflected 12v/15w halogen; *LED illumination</p> <p>C-Mount SZM 1X C-Mount; *SZM 0.5X C-Mount; SZM 0.3X C-Mount</p> <p>Accessories: Yes</p>	
Department/Section of Veterinary Physiology				
1	Wintrobess sets.	12	<p>Reusable blood sedimentation tubes suitable for determining sedimentation rates and the volume of packed red blood cells. Thick walled, cylindrical, and 11 with internal bore diameter of 2.5 mm</p> <p>Graduations from 0-10 in both upward and downward direction</p> <p>Provided with wintrobe stand</p>	Must be of reputed brand
2	Stimulators	1	A part of Kymograph	USA/ Japan/France/ Germany
3	Catheters (solstice)	12	<p>Feline Catheter, Equine Catheter</p> <p>Mare: 8.0 mm X 700 mm, -PVC, Sterile, Luer Hub, Plastic, Catheter, Mare Equivet, 8.0 mm</p> <p>Stallions: Catheter, Stallion Equivet, 6.5 mm, 6.5 mmX1350 mm, -transparent PVC, -sterile, -Luer hub, Canine Catheter, Description: Canine urinary catheters, 3,3X600 mm</p>	Must be of reputed brand
4	Electrocardiogram (portable)	1	<p>Animal Portable electrocardiogram appreciable: Frequency 25-50Hz</p> <ol style="list-style-type: none"> 1. Sync sampling, digital signal processor, gets better quality ECG waveform by ECG signals filtering through the power frequency filter, baseline filter and EMG filter. 2. Display 3/6/12-lead ECG waveform, and states of print mode, sensitivity, paper speed, filter, etc. in one screen, convenient for contrastively diagnosing. 3. Multi-print mode and format: manual and automatic 4×3, auto 3×4+1, auto 3×4, auto 2×6+1, auto 2×6, auto 3-2+1, auto 3-2, auto 1x12+1, auto 1x12, rhythm 4, rhythm 3 and rhythm2, etc. Waveform length can be adjusted and timing print function is available, which meets the need of different applications. 4. Built-in high-capacity memorizer can store up to 1000 cases, which is convenient for doctor's review and statistic. 5. The interface languages including: English 	USA/ Japan/France/ Germany
Department/Section of Biochemistry				
1	Refracto meter	1	<p>Measurement range nD: 1.32000-1.58000</p> <p>Accuracy nD (±): 0.0002</p> <p>Repeatability nD (±): 1e-005</p> <p>Measurement range Brix: 0-100 % w/w</p> <p>Accuracy Brix: 0.014 % w/w</p> <p>Temperature control range: 5 °C – 75 °C</p> <p>Temperature control accuracy (±): 0.03 °C</p> <p>Minimum Sample volumes: 0.50 mL (0.5 mL)</p> <p>Measurement Scales: Refractive Index, Sugar (Brix and more), Acid/Base, Chemical, Freezing Point, Salt, Others; Up to 30 user-defined concentration tables (can be entered as tables or formulas).</p> <p>Built-in Measurement Scales: Others; Chemicals, acids, bases and freezing point tables; Refractive Index; Brix / Sugar tables</p>	

			Connectivity: HDMI (Terminal); USB client (PC Software); Ethernet (Network and PC Software); 3 × USB host (printer, memory stick, barcode reader, hub, keyboard, mouse); RS232 (Automation units); CAN (Multiple LevelSens) Product Type: Benchtop refractometer Compliance/Data Security: Audit Trail (requires LabX software); Data integrity (requires LabX software); 21 CFR part 11 / EU Annex 11 (requires LabX software)	
2	Polarimeter	1	Principle: Automatic digital polarimeter with symmetric angular oscillation using the optical-null balance method Light Source: Tungsten-Halogen lamp (W), Sodium lamp (Na), Mercury lamp (Hg) (Up to two light sources can be installed.) Modulator: Faraday cell Wavelength: 253, 280, 296, 313, 302, 325, 334, 365, 405, 436, 546, 578, 589, 633, 880 nm Aperture: 1.8, 3 and 8 mm diameters Angular Range: ±90° Response Speed: 6°/sec Measurement Accuracy: ±0.002° (up to 1°) Repeatability: ±0.2% (larger than 1°) 0.002° Resolution: 0.0001° Integration Time: 1-100 sec Detector: Photomultiplier tube (1P28-01) (R928 - option) Readout Modes: Optical rotation, optical specific rotation, concentration, sugar scale Z, Brix purity, optical purity Temperature Measurement Range: 0~40°C (minimum display temperature: 0.1°C) Power Requirement: AC100~240V ±10%, 50 or 60 Hz, 80 - 300 W Dimensions: 653 (W) x 249 (D) x 364 (H) mm Weight: Approx. 30 kg	USA/ Japan/France/ Germany/China
Department/Section of Veterinary Pharmacology				
1	Colter Counter	1	Particle size range of 0.3 to 10µm, Lightweight and ergonomic design, 10 hours of standard-use battery life, 10,000 records stored, View data in traditional tabular or trend graph, Configurable display, sample methods, & alarm setting, Data export to USB or PC, Internet-enabled and meets ISO, JIS, and CE standards	Local/Imported
2	Anesthetic Monitor	1	12.1" inch colored display, parameters: SpO ₂ , ECG, NIBP, TEMP, RESP, Suitable for dogs, cats, and horses, 72 hours of graphic and tabular trends, 32 seconds full-disclosure waveform review, Built-in rechargeable lithium battery, Power supply: AC85~265V/50Hz/60Hz	Local/Imported
Department/Section of Veterinary Microbiology				
1	Sites filter (assemble including sites filters etc.	1	Sites filter filters are asbestos pads provided with metal holder and assembly system with vacuum pump, EK-grade which retains bacteria, for separation of viruses from bacteria, Approximate size of the virus, Sterilization of certain thermo-labile material	USA/Europe
2	Freeze Dryer Machines (with oxyflame sealer, complete set for small vials)	1	STFD-10B, Drying Chamber type, Standard type. Ice Condenser capacity 3Kg/24h, Final condenser Temperature ≤-60°C, Effective shelf area 0.1m ² , Shelf layers 4, Shelf tray dimension Diameter Φ210 mm Φ180 mm, Height between shelves 50mm, Shelf heater optional, Refrigerant system, Refrigerant gas, Mixed CFC free, HCFC-free, Number of compressors 1, Cold trap cooling rate, 20°C to -40°C ≤30min (no load), Controller, 5 Inch color touch screen controller with LyoWise operation System, Freeze-drying Process, User Programable Optional, Data Storage Yes, USB port Yes, RS232 port Yes, Auto defrost Yes, Power Voltage	USA/Europe/ Germany/ equivalent

			220v50hz,220v60hz,110v60hz, current Main unit 5A, Total power 1250W, Vacuum pump Yes, Vacuum degree ≤ 5 Pa (no load), Vacuum pumping rate, from standard atmospheric pressure to 10Pa ≤ 10 min (no load), Vacuum rate 2L/s, Main unit, Vacuum leakage, 3×10^{-2} pa L/s, Material 304, Condenser trap material SUS304, Sensor type PT100, Material sensor ± 4 , External dimensions (L \times W \times H) 610*610*460mm, Weight 90 kg.	
3	Sonicator	1	SDS-3, S-DS-3, Tank Size (mm) 240x140x100, Overall Size (mm) 270x170x240, Volume (L) 3L, Adjustable Heating 0-80°C, Handle Y, Drain N, Lid/ Basket Y	USA/Europe/ Germany
4	Punch for AGPT	1	Punches for gel cutting with suction 3.5 mm circular junks out of gel to prepare wells for antigen-antibody interaction based agar gel precipitation test	USA/Europe/ Germany

LOT No. 2

Lot #	Name of item	Qty	Specifications	Origin/Make
Department of Veterinary Parasitology				
1	Dissection microscope	3	Binocular viewing head, inclined at 45°, 360° rotatable, Inter pupillary adjustment distance 54-76mm, left Eye piece WF 10/20 mm, magnification 20x, 40x, Working distance 100mm, head mount 76mm, dual light	Advance Country
2	McMaster Counting Chamber	12	For counting worms eggs, suitable for solid media, dimensions: approx.. 75 X 25-32 mm, cover glass with 2 counting grids approx.. 10 X 10mm (divided into 10 parts) affixed on 3 supports, distance between bottom plate and cover glass: approx.. 1.5mm, Gride size:10mm X 10mm, WD: Requires at least 0.5mm working distance	Advance Country
Department of Veterinary Pathology				
1	Specimen slides of various histopathological lesions. (100 slides)	1	Set of 100 prepared microscopic veterinary pathology slides for veterinary medicine education study Different cases with a confirmed diagnosis Slides with Hematoxylin and Eosin (HE) stained samples	USA/Europe/ Germany/ China/equal
2	Heavy duty rotary/autopsy saw for large animal P.M with assembly	1	<u>A- Rotary/Autopsy saw</u> Single press on/off operation Efficient 13,200 Oscillation per minute cycle Watertight to IP67 rating Flexible silicon hood for improved visibility Operates on safe 40 Volts Reduced overloading via electronic current limiting, device double pole fused Easy blade rotation and fixation Extra blades of different sizes <u>B- Roatory mictome</u> for tissue sectioning Section Thickness Range: 1 - 60 μ m Trimming Thickness Range: 5 - 500 μ m Power source Electricity/Manual With all accessories	USA/Europe/ Germany/ equivalent
3	Microtome, blade (100), Tissue castes/rings, S.S L mold	1	High quality S.S blades (100 blades) for rotary microtome 3 \times 2.5 \times 0.4 cm Plastic tissues cassettes (1000) for tissues processing 3 x 2.4 x 0.5 cm stainless steel mold (100), non-stick with Nano-layer coating for faster cooling	Local/imported
4	Dark field illumination with projecting units	1	All projecting units Head:Binocular or Trinocular 60 degree rotatable Eyepieces: 10x/22mm Both focusing Nosepiece: Quadruple/5 Place Nosepiece Objectives: Plan Phase E Plan 4x, 10x, 20x, 40x, 100x Oil Stage: Graduated mechanical XY	Imported/USA/ Europe/ Germany

			Condenser: Darkfield Oil or Darkfield Dry Condenser, Phase turret condenser - brightfield, ph1, ph2, ph3, darkfield Focusing: Coarse & Fine Illumination: Halogen w/ blue filter Warranty: 5 Year	
5	Wintrobes pipettes	1	Additional attributes: Self Zeroing Disposable/reusable/reposable: Disposable Graduation: Graduated Material : Glass/Polystyrene Primary LWH: 150mm (Quantity : 100/Box) CLIA Complexity: Waived	Imported
6	Hemocytometer	10	Reusable hemocytometer cell counting chamber for counting cell densities Cell depth: 0.100 mm Volume: 0.1 Microliter Ruling Pattern: Improved Neubauer, 1/400 Square mm Include 100 22x22 mm glass cover slips	Imported
7	Hemoglobin meter	10	Digital Hemoglobin meter Time to Results: < 15 seconds Memory : 1,000 tests with date/time and ID number Specimen Type: Capillary and Venous whole blood Power Source: Batteries / Adapter Include 100 strips	Imported/USA/ Europe/Germany/ equivalent
8	Slide cabinet 5000 capacity with histopathology slides	1	Material: Wooden Usage: to keep microscope slides safe No. of Slide: 5000 Finish: Painted	Local/Imported
9	Cold Room	1	Cold Storage room Room dimensions: Height: 11 feet, Widht: 9 feet Length: 10 feet Temperature Range -10°C to 25°C	Imported/Local
10	Protective wear (gloves, rubber, apron goggles gum boots, masks & cap etc.)	1	Positive pressure protective suits/space suits/moon suits/blue suits" (02) Disposable surgical caps(1000) Disposable Surgical Gloves (1000 pairs) Rubber Gloves (50 pairs) Disposable Face mask (1000) Ear plugs (100 pairs) Laboratory aprons (24) Laboratory coats (12) Laboratory Goggles (12) Plastic safety Gum boots (12 pairs) Disposable Shoes cover (1000 pairs)	Imported/Local
Department/Section of Veterinary Medicine				
1	Phonandoscopes	1	Chestpiece Machined Stainless Steel Two-sided Binaurals Single Lumen. Tunable Diaphragm. Headset Material Alloy. Length min. 28 in/71 cm Diaphragm Diameter min.1.75 in/4.4 cm Bell Diameter min. 1.25 in/3.2 cm	Local/imported
2	Blood-pressure monitors	1	Oscillometric Blood Pressure Range: Systolic: 40 – 265mmHg Diastolic: 20 – 200mmHg Mean Arterial Pressure: 27 – 222mmHg Heart Rate: 25 – 300BPM Pulse Rate Range:25 to 300 BPM (Beats Per Minute) Cuff Deflate Rate: Deflation variable step size. Initial Inflation Pressure:180 mmHg (default). Subsequent initial inflation: previous Systolic + 30 mmHg Transducer accuracy:±3mmHg between 0 mmHg and 300 mmHg	Local/imported

			Operating Conditions:0°C to 50°C, 15% to 90% non-condensing humidity Power: Lithium-Ion battery. A/C Power Adapter - Input:100-240v ~ 47-63Hz 0.48A Max, Output: 5.9V 3A 17.7W Max with battery	
3	Otosopes with Accessories	1	The ear specula of 3 different sizes 2,3,4 diameter at tip. Illuminating device with condensing lens and a 2 times magnifying glass.	Local/imported
4	Laryngoscopes	1	with fibre optic light source on either side. Sealed LED light source Waterproof handle Complete set with handle and 5 blades. blades available in 300 mm (12") and 350 mm (14") (for large dogs, sheep, goats and zoo animals)	Local/imported
5	Oesohagoscopes	1	Fiber optics ring of light with no reflections, no obstructions. autoclavable stainless steel Graduated tube with removable and cleanable tip. Oesophagoscope min. Length 45cm Dia 16mm	Local/imported
Department/Section of Veterinary Surgery				
1	Pedestal Surgical lights	1	5-reflector OT light mobile with stand. Illuminance: 735- 5000Lux Color Temperature: 4300±200k Color rendering index: Ra≥90 Rated Voltage of Bulb: 24V Diameter of luminous spot: 100-250mm	Local/Imported
2	Dressing drum small	1	Domed top and bottom with sliding removable band, and drop down-hasps Size approx. 6" (Dia.) X 6" (Height).	Local/Imported
3	Dressing drum large	1	Domed top and bottom with sliding removable band, and drop down-hasps Size approx. 11" (Dia.) X 9" (Height).	Local/Imported
4	Orthopedic Instruments, large animal	1	Human Hard tissue kit is also appreciable 1. Senn miller Retractor 16 cm blunt 2. Army Navy orthopedic retractor with three hooks 3. Mallet blunt ended 8 X 12 mm and 13 X 45 mm 4. Hohmannsmall, medium and large curved tip 5. Gelpi Perinal and orthopedic retractor 6. Finochietto cardiovascular chest retractor 7. Weitlaner retractor 8. Balfour abdominal retractor 180 mm 9. Lambert Rongeur 158mm 10. Bone Plate modification equipment (2 types) 11. Curette small, medium and large sized 12. Electric Cast Cutter (Oscillating Saw) 13. Lane Bone holding forceps 14. Reduction bone holding forceps 15. Lewin Bone holding forceps 16. Wolford bone holding forceps 17. Periosteal elevator small, medium and large size 18. Chisel small, medium and large 19. Gigli saw wire 20. Jacob's Chuck with Key & guard 21. Orthopedic Hammer 22. Pin Cutter small, medium and large 23. Wire Cutter 24. Wire Twister 25. Electric / Battery Driven Drill Machine 26. Drill Bits (2.5, 3.2- & 4.5-mm Diameters) 27. Drill Sleeve for 2.5, 3.2- & 4.5-mm Drill Bits 28. Drill Sleeve with external diameter of 4.5mm 29. Cortical Bone Taps 3.5 & 4.5 Diameter (T-Handle) 30. Cancellous Bone Tap 6.5mm Diameter (T-handle) 31. Tap Sleeve for 3.5- & 4.5-mm Bone Taps 32. Depth Gauge 33. Counter-Sink for 3.5- & 4.5-mm Cortical Screws 34. Screw Driver for screw driver mentioned below	Local/Imported

			diameter Cortical Screws 35. Load Guide for 2.5- & 3.2-mm Drill Bits	
5	Endoscope, small animal	1	Clinical Veterinary Purpose: Small animal endoscope (Including scope, light source with light guide cables, processor, suction and irrigation pump, metal trolley, and Monitor 27 inch)	Local/Imported
6	X-ray accessories cassettes and different Chemical	1	X-ray Cassettes with appropriately sized 100 film packs: Small: 3" (7.6 cm) H x 4" (10.2 cm) W x 10" (25.4 cm) L Medium: 5" (12.7 cm) H x 7" (17.8 cm) W x 15" (38.1 cm) L Large: 7" (17.8 cm) H x 11" (27.9 cm) W x 24" (60.9 cm) L Suitable SS clips, 3 tanks of 5gallons developing tanks with lid, safelight, Developer & fixer solution.	Local/Imported
7	Emasculator for equines	1	Emasculator Double Crush (Whites or Serra) sized around 12.5". Must simultaneously perform clamping, crushing and cutting of spermatic cord.	Local/Imported
8	Trephine	1	Galt Skull Trephine, with adjustable centering point and detachable 19mm cross-bar handle	Local/Imported
9	Otoscope	1	Human Otoscope is also applicable. The ear specula are supplied in 3 different sizes 2,3,4 diameter at tip. Inexpensive basic model with low-reflection, direct illumination with a 2.7 V vacuum bulb (2500 K) or halogen illumination (3000 K)	Local/Imported

LOT No. 3

Lot #	Name of item	Qty	Specifications	Origin/Make
Department/Section of Animal Reproduction				
1	Electro-ejaculator	2	<p>A- Electro ejaculator Large</p> <p>Should be from advanced countries (America/Canada/Europe/Japan origin or equivalent). Electro ejaculator probe, Ø: 2/5" / 6.35 cm; length: 40 cm; 3 electrodes Manual adjustable pulse/pause ratio/ pulsator, Control unit for pulse adjustment, Probe cable, Power supply cable, Remote control with cable, Power output with 4 different types of curves enabling balanced setting, according to the animal size and sensitivity, Probes insulation, for highest safety for the operator and the animal, Emergency power cut off system, Whole unit with robust plastic carry case for each part for mobile use Digital power control with microprocessor, 3-digit digital display for the indication of the power output (display values from 0–20 with a resolution of 0.5 units), Semen collection funnel and holder according to the large animal along with AV cone, Operational on 220 volts 12 V extended power supply source Connecting cable for external battery Time delay stabilizer</p> <p>B- Electro ejaculator Large</p> <p>Should be from advanced countries (America/Canada/Europe/Japan origin or equivalent). Electroejaculator probe, Ø: 1" / 2.54 cm; length: 16 cm; 3 electrodes Manual adjustable pulse/pause ratio/ pulsator, Control unit for pulse adjustment, Probe cable, Power supply cable, Remote control with cable</p>	USA/Europe/ Germany or Equivalent

			<p>Power output with 4 different types of curves enabling balanced setting according to the animal size and sensitivity, Probes insulation, for highest safety for the operator and the animal, Emergency power cut off system, Whole unit with robust plastic carry case for each part for mobile use</p> <p>Digital power control with microprocessor, 3-digit digital display for the indication of the power output (display values from 0–20 with a resolution of 0.5 units), Semen collection funnel and holder according to the rams/bucks along with AV cone</p> <p>Operational on 220 volts, 12 V extended power supply source</p> <p>Connecting cable for external battery</p> <p>Time delay stabilizer</p>	
2	Artificial Insemination Accessories	1	<p>-Embryotomy Instruments set (Made up of stainless steel and containing the following items; Smellie Perforator, Beacham, Greem Armlage, Braun, Braun Crainioclast, Kelly, Simpson Braun, Sims) for large and small animals one each</p> <p>-Vaginal Clamps (large and small)</p> <p>Thermos flask (Stainless steel and maintain the temperature for at least 6 hours)</p> <p>-Nose tongs made up of stainless steel</p> <p>-Wooden stand for LN containers (6ft x 3.5ft x 1ft)</p> <p>-Rinsing cans (Plastic cans 19L)</p> <p>-Holmes needles</p> <p>-Metal funnels for pouring LN into containers</p>	USA/Europe/ Germany or Equivalent
3	Artificial Vagina for buck	15	<p>(A) Artificial Vaginas for Bucks/ Rams: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Outer core of \approx 18-20 cm, Inner liner imported (Four rough neoprene inner liner and one plain neoprene inner liner), Valves and rings, AV cone (good quality latex), KY Jelly tube Pressure hand pump, Valves should not be loosen when hot water is to be injected in AV, Leather jacket for maintaining temperature of the AV accordingly</p> <p>(B) Artificial Vaginas for Bull: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Outer core of \approx 42-45cm cm, Inner liner imported (Four rough neoprene inner liner and one plain neoprene inner liner), Valves and rings, AV cone (good quality latex), KY Jelly tube Pressure hand pump, Valves should not be loosened when hot water is to be injected in AV, Leather jacket for maintaining temperature of the AV accordingly. With leather jacket compatible to artificial vagina and collection vial cover</p>	USA/Europe/ Germany or Equivalent
4	Cold cabinet	1	<p>Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent).</p> <p>Horizontal cold cabinet customized for refrigerated workspace for frozen semen straw production. The worktable should be useable to house the semen straw filling and sealing system, or for the equilibration of straws.</p> <p>The horizontal cold cabinet should be used to conveniently lower the temperature of a workspace to refrigeration 4°C temperature at least.</p> <p>Ergonomic design for ample, easy access from all sides that can be completely covered with easy-to-use rolling covers.</p> <p>It should be easily movable from one to other place.</p> <p>With semen straw stainless steel racks (N=30)</p> <p>With stainless steel bubbler dish stand (N=3)</p>	USA/Europe/ Germany or Equivalent
5	incubator temp control	1	<p>Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Temperature range ambient +5°C to 60 °C * 0.1 °C resolution, temp control, thermos state digital</p> <p>Incubator interior and exterior stainless steel</p> <p>Highly sensitive microprocessor PID- Temp control</p>	USA/Europe/ Germany or Equivalent

			<p>Extremely accurate, ideal for all applications with temperatures. Ambient +5 °C to +70 °C with natural convection, digital LED display of set and actual temperature Double door interior Glass and exterior stainless steel with integrated auto diagnostic system, integrated digital timer (1 minute up to 99 hours 59 minutes) Capacity 75 liters Complete with two stainless steel shelves operated on 220 V.</p>	
6	Automatic straw printing, filling and sealing machine	1	<p>50) Automatic Semen Straw printing Machine: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent) Should print the straw with advanced high adhesion ink Easy readable & affordable coding Easy adjustable micrometric print – head fixture for top & bottom, front & back positioning of print-head for accurate results Should have automatic straw counting unit Printing capacity of 1 to 3 lines per straw Printing of barcodes, logos and special characters Clean and odorless working Print speed: 13pprox.. 3400-8000 straws/hour Electrical connection: 110/230 V, 50-60 Hz Unmatched neat and clear printing on 0.5- and 0.25-ml straws Up to 3 lines with a total of about 200 characters, even on Mini Straws Printing of barcode signs, logos and specific characters Immediately non-abrasive print Control via PC by a clear and user-friendly software Sequential numbers can be printed on straws Adjustable character fonts and graduations from micro to macro Freely eligible number of lines and of printing positions B) Straw Semen Filling Machine: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent) -Filter and Vacuum Pump - Pump connection tube - 20 straws Clip 0.25ml - 15 straws Clip 0.5ml - 0.25ml filling nozzle with 15 pins - 0.5ml filling nozzle with 15 pins - 0.25ml bubbler with filling nozzle - 0.5ml bubbler with filling nozzle -straw comb (N=150) - bubbler dishes (N=500) C) Semen Straw Sealing Machine: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent)</p>	USA/Europe/ Germany or Equivalent
7	Liquid Nitrogen Cylinder	1 set each	<p>A) Should be of advanced country -Made up of stainless-steel having capacity of 10-20L -Having six canisters according to container size -Six goblets of high quality that can bear the -196°C temperature -Goblets should be compatible to canister size -Daily Evaporation (0.10 L/Day) -Static Holding Time (93 Day) -Dynamic Holding Time (93 Days) -Max Capacity of 0.25 ml straw 1560 -Max Capacity of 0.5 ml straw 720</p> <p>B) Should be of advanced country -Made up of stainless steel having capacity of 47-50L (N (Narrow neck)=2 and N (wide neck)=3)</p>	USA/Europe/ Germany or Equivalent

			<p>-Daily Evaporation rate 0.27 lit / day</p> <p>-With 10 Nos of Canisters Stainless Steel (double straw placement)</p> <p>-Static holding time : 180 Days, Maximum Capacity for 0.5 MI Straw 7300</p> <p>-Twenty goblets of high quality that can bear the -196°C temperature</p> <p>-Goblets should be compatible to canaster size</p> <p>C) Should be of advanced country</p> <p>-Made up of stainless-steel having capacity of 100-150 liter and wide neck 18 inch and above (N=1)</p> <p>-Daily Evaporation rate 0.27 lit / day</p> <p>-With 6 Nos of Canisters Stainless Steel (double straw placement)</p> <p>-Static holding time : 30-60 Days, Maximum Capacity for 0.5 MI Straw 6000</p> <p>-Goblets should be compatible to canaster size</p> <p>-SS stands for straw rack vapor freezing</p>	
8	Power Backup	1	<p>A) 5-10 KVA Generator</p> <p>60 Hz Power Rating: Standby Power Rating: 12 kVA / 10 kW Prime Power Rating: 11 kVA / 9 kW</p> <p>50 Hz Power Rating: Standby Power Rating: 10 kVA / 8 kW Prime Power Rating: 9 kVA / 7 kW</p> <p>The control panel, service doors and canopy board should adopt a waterproof design and effectively stop rain and dust intrusion</p> <p>There should be anti-vibration mountings between the engines, alternators and the base that significantly reduce the vibrations during operation, ensuring stable operation.</p> <p>The machines should be equipped with monitoring system, helping monitor the operation at real time.</p> <p>There should be the double protection for the cable connection panel that lowers the probability of leakage caused by unintended touch or water intrusion and three-dimensional CABLING design for all the generator cables, providing reasonable, accurate and perfect protection.</p> <p>Automatic turn-on circuit breaker with under-voltage protection system inside maximally avoids mistakes.</p> <p>The radiator and high-voltage parts should be guarded to avoid accidents caused by touch.</p> <p>The control panel should be lockable and current changeover switch, voltage regulator and circuit breakers should be installed behind the door.</p> <p>Anti-vibration rubber mounts should be installed in the two sides of the doors to avoid damage to the machines when open the doors.</p> <p>There should be outer filling fuel port and lockable fuel-filling cap and micro-processor cored digital system.</p> <p>Connected with mains through ATS, which can help realize automatic transfer between the mains and the generators. There should be 8-12 hours based fuel tank in soundproof generator sets.</p> <p>B) UPS 6KVA with lithium Batteries and Solar Panel (N=1):</p> <p>C) CCTV cameras</p> <p>-UHD IP cameras, 5MP, (N=16) with NVR, LED (50 inches) and connection cables (250 meters)</p>	USA/Europe/ Germany or Equivalent
9	Hot air oven	1	<p>Should be from advanced countries (America/Canada/Europe/Japan origin or equivalent). <u>-Stainless steel interior</u></p> <p>Volume ≈ 449 L</p> <p>Width 1040 mm</p>	USA/Europe/ Germany or Equivalent

			<p>Height 720 mm Depth 600 mm Max no. of grids 7-8 Max loading grid per shelf \approx 30 kg Max loading of chamber \approx 300 kg Max. loading per slide-in drip tray \approx 8 kg Max. loading per bottom-in drip tray \approx 8 kg <u>-Stainless steel exterior</u> Textured stainless steel exterior Width \approx 1224 mm Height \approx 1247 mm Depth 784 mm Stainless steel grids electropolished Working temperature range should be ambient to +300°C Setting accuracy Up to 99.9: 0.1 / from 100: 0.5 °C Electrical load 220 Volts Full sight glass doors Door with lock Stainless steel grids with electropolished Power cable Time delay system stabilizer</p>	
10	Spectrophotometer	1	<p>Photometer for Sperm concentration measurements -Spectral range: 430 – 680 nm -Filter: 546 nm -LED light source -10 mm macro cuvettes -Analysis time: 2 seconds/sample -Digital display: result in billions of sperm/ml -Print out includes the following data: sperm quality and quantity, volume of diluent required and sperm per dose -Electrical connection: 110-230 V/50-60 Hz -Programs for semen concentration measurement of semen of several species and for extinction of light -Automatic calculation of extender volume and number of doses -Large touch screen, easy handling</p>	USA/Europe/ Germany or Equivalent

LOT No. 4

Lot #	Name of item	Qty	Specifications	Origin/Make
Department/Section of Animal Nutrition				
1	Photometer	1	<p>Double beam spectrophotometer (UV-Vis) with wide and color LCD screen. Spectral Bandwidth should be 0.5, 1, 2, 4nm. Wavelength Range 190 – 1100nm. Detector Solid Silicon Photodiode, Light Source Tungsten Halogen/Deuterium Lamp. Wavelength Setting should be automatic, Wavelength Accuracy should be \pm0.3nm, Wavelength Repeatability should be \leq0.2nm. The instrument should show various scanning curves and charts for users to complete various tests without computers. Support USB storage and different data formats such as Excel, txt and image. The instrument should have advanced hardware and processor. The equipment should have long-life socket type tungsten-halogen and deuterium lamps which can work up to 2000 hours, can switch the lamps according to test needs and record its working time automatically. The instrument can be connected to printer directly and output test charts and data. All allied accessories for installation. Laser printer should be supplied with spectrophotometer</p>	USA/Europe/ Germany/ Equivalent
2	Bomb calorimeter	1	<p>Bomb calorimeter: Heat capacity (14000 ~ 15000) J/K Resolution 0.001 K Measurement accuracy \leq60J/g Display LCD Printer Yes Repeatability error \leq0.2% (Grade C) Pressure endurance of bomb 20 MPa Power \leq150W, stainless steel inner water cylinder Equipped with electric stirrer in the water tank Double-layer external container High uniformity of water</p>	Local/imported

			<p>temperature to meet the requirement of test. Temperature: 5-40 degree centigrade, Measuring range: 5 MJ/kg to 40 MJ/kg, Testing time: 8-15 minute, Power supply: 220 volts, Power: 1.5 KW, Oxygen supply: Automatic, Bomb Firing: Automatic/ Button press, Calculations: Automatic, Data storage: Through computer, Whole material: Stainless steel with external water jacket should be double layered, A computer should be attached for data storage, all accessories along with fittings and dust cover</p>	
3	Particles Separator	1	Set of 4 sieves (19mm, 8mm, 3mm and 1.20mm diameter) with tray as base and cover similar to Pen state particle separator	Local made
4	Silo pits/towers/bunkers models	1	Model of silage Bunkers, silage Trench and silage Tower made up of MS Steel: Bunkers having the dimension of 4x4 feet base divided into 3 parts having the height of wall of bunkers 1.3 foot, Trench having the dimension of 4x3 feet from outer while the inner trench dimension is 3x2 feet and having the collar of ½ foot, , Towers having the dimension of 2.5x3 feet with circumference of 2 feet with lid at the top of tower and opening at the base.	Local made
5	Feed formulation Software	2	<p>A- Dairy Feed formulation software Dairy feed formulation software: Registered Windows 08/ 10, also OS apple supporter, should programmed in Microsoft CTM 32 or 64-bit Microsoft or OS Windows applications and were programmed in Microsoft Visual Basic 6.0 or 8.0TM and Microsoft C++ 6.0or 8.0TM with a Microsoft Access 2000TM database capability to store input and output values. Work under Mathematical nutrition model that computes dairy cattle requirements energy and nutrients based on characteristics of the animal, environment and the physicochemical composition of the feeds under diverse production states. Designed as a steady-state model to use rates of degradation of feed carbohydrate and protein and the rate of passage to estimate the extent of ruminal fermentation, microbial growth, and intestinal digestibility of carbohydrate and protein fractions in computing energy and protein post-rumen absorption, and the supply of metabolizable energy/net energy and protein to the animal. Facilitate the characterization of individual feeds and a sub-model to predict ruminal metabolism and intestinal absorption of long chain fatty acids. Can calculates a least cost formula. It should have advanced features like, Para metrics, Formula comparison, Cost Summary (Profit/loss Managed by adding Sale price, Overhead charges etc.), Nutrients Ratio's (Lysine to other Amino Acids). Formula Report available in Notepad, Excel, Word, and pdf format. Amino Acid Calculator (Total and Digestible) just select ingredient and add Crude protein Value). Energy Calculator, just select ingredient and add values of Proximate analysis on a singal click it calculate Metabolizable Energy/net energy. Should be compatible with Window 10, 64-Bitt. A computer with Processor i5, 10th generation, Ram 8 GB, Storage 256 SSD to run the software.</p> <p>B- Computer with Poultry Feed formulation software The software should be least cost formulator and evaluator. Auto calculate ingredients without leaving stored formula screen, Change plant codes easily, Export data to tables, Database of feed ingredient and cost, Show nutrient composition on percentage of dry matter and fresh matter, It defines the nutrient level required in the formula and feed ingredient inclusion level, Click to copy data from one plant to all plants within same source plant, Click to delete a nutrient from all ingredients, Compare nutrients in new vs. stored formula, Changes from 0 are marked in red, Formula stored date” on optimization main screen,</p>	Local/imported

		<p>The software should be easy and friendly to useful for poultry Poultry Feed. Multi-plants (Each plant having specific Ingredients, Nutrients, Formulas store and Ingredients Prices) It should have power to handle unlimited numbers of Ingredients (Ingredients values also automatically set on Moisture Basis on a single click) and Nutrients A high-quality interface to set Ingredients and Nutrients Values and limits. Can import and Export database (ingredients, Nutrients, Composition and Price) between computer. Can calculates a least cost formula. It should have advanced features like, Parametrics, Formula comparison, Cost Summary (Profit/loss Managed by adding Sale price, Overhead charges etc.), Nutrients Ratio's (Lysine to other Amino Acids). Formula Report available in Notepad, Excel, Word, and pdf format. Amino Acid Calculator (Total and Digestible) just select ingredient and add Crude protein Value). Energy Calculator, just select ingredient and add values of Proximate analysis on a singal click it calculate Metabolizable Energy. Shoul be compatible with Window 10, 64-Bitt.</p> <p>A computer with Processor i5, 10th generation, Ram 8 GB, Storage 256 SSD to run the software.</p>	
6	2D/3D digital video microscope with computer and 50 inch LCD	<p>1) Digital video Microscoppe 2) Color Printer 3) LCD 50" inches 4) Desktop computer</p> <p>1) Digital video Microscope: 2D and 3D observing USB fluorescence magnifier camera microscope, Lens parameter: Optical magnification 0.6-5.0X, Total Magnification 11-95X base of 12.5"monitor, Working distance 2D:100mm 3D:75mm Ratio 1:8.3 Field of View 24*13.5-2.88*1.62mm Lens Mount Standard C mount, 2D/3D viewer, Support 2D/3D observing 360 °rotation, 45 objective viewing angle Camera Parameter: Image Sensor 1/2", Max magnification 1920 x 1080, Pixel Size 3.75µm x 3.75µm White Balance Manual and auto Brightness control Manual and auto, Memory function Take photo or video to U disk, Output HDMI TYPE, Monitor Parameter: Size 24.0" Type IPS Resolution 1920*1080, Color display 16.7M Brightness 300 cd/m² (Typ.) Contrast 1000:1 (Typ.) Power supply DC : 12V 2A Input HDMI and VGA StandAram stand, Light Source Parameter: Light Control 4 zones control. Brightness adjust Light color White Quantity of LED 208PCS LED Intensity 15000 Lux Wavelength 455-457.5nm Output voltage 12V Output power 8-10W Working distance 35-110mm Material Aluminum alloy Diameter Inner diameter 40mm, outer diameter 106mm, height 19mm, Stand Parameter: Focus Coarse focus Base size 330*300mm Height 318mm</p> <p>2) Color Printer: Type: New Flatbed Inkjet Printer, Wi-Fi Accesses, Automatic, USB Aces, Multicolor, A3- A4 simple Paper Printer, Label Printer Voltage: AC 220 V - 240 V, Print speed: BK-30 ppm; Colors-4color CMYK, Printing Resolution 5760 * 1440dpi, Paper capacity: 100 sheets, Warranty of core components: 1 Year, With All accessories; Two boxes of all kinds of printer ink.</p>	Imported

			<p>3) LCD 50" inch: TV Type Smart TV USB Port 2.0 Remote Control Audio systems Dolby Digital Remote Control Type Wattage per Speaker Channel (RMS) 10 W x 2 Built-in speakers Standby Power Consumption 0.3 W Package weight in KGs 17.5 Kgs Processor Type Quad Core VESA Mount (400x400 mm) Display Resolution 3840 x 2160 Frequency 50/60 Horizontal resolution 3840.0 Bluetooth Internet connection Integrated WiFi Input voltage 220 – 240 Wireless Standard 802.11ac Operating System Type Tizen WiFi Full HD, HDMI Yes Display Type LED TV Ethernet Display, Screen Size 50 Inch HDTV 4K UHD Connectivity Number of HDMI Ports 3.0 Technical Information Aspect ratio 16:9</p> <p>4) Desktop computer: Minitower case Processor type: Core i3, 10th generation Ram: 4GB Hard drive size: 256 GB SSD Monitor: 1No. (minimum 19 inch) Key board: 1 No. Mouse: 1No. Smart Share FHD 1080P Auto Volume Lever 50-inch display Noise Reduction 2x HDMI</p>	
Department/Section of Poultry Husbandry/Science				
1	Egg grader Machine	1	<p>Specifications: 1-Grading and packing eggs on weight Max. capacity (eggs/hour) 3000 eggs Max. capacity (cases/hour) 8.3 Footprint (L x W) 1540 x 1755 mm Operators 1 or 2 Candling 2 x 23 Watt PL lamp + mirror Grades 4 or 7 Accuracy ± 1 gram Infeed conveyor Double row Power supply 230V 1-phase, 50 or 60 Hz. (In case of 110V, an additional transformer is needed)</p> <p>Packing. Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea. The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>	Advance
2	Chick Sexing Machine	1	<p>Specifications: The English or Japanese chick tester machine features A blunt-ended endoscopic tube/probe, containing a camera with light. The sexer inserts the tube/prob into the evacuated cloaca and with the help of the camera/light can identify either testis or ovaries.</p> <p>Packing. Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea. The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>	China/Advance
3	Egg Analyzer	1	<p>Specifications: An electronic scale measures the egg's weight Ultrasound sensors measure the albumen height and yolk color without touching the egg Automatically calculates and classifies the Haugh unit Displays and prints measured values and calculated values High measurement accuracy Constantly stable measurement, not dependent on individual operators Shortens the measurement time to approx.17 seconds per set Proprietary software works with an external PC and allows: Enhanced data storage and retrieval Advanced data processing Superior printing option</p>	Advance

			<p>Characteristics: Albumen height: 0mm - 30mm +/- 0.1mm Yolk color: 1 - 16 according to the DSM (formerly Roche) Yolk color fan (support 16 colors, NEW) Haugh unit: 0 - 130 HU Stores, calculates and averages up to 1000 units of data Displays results on LCD screen Built-in printer (uses an off the shelf thermal paper) Suitable to worldwide voltage supply: 90 - 230V, 50/60 Hz</p> <p>Proprietary software for external PC operation via USB communication cable Dust Cover Packing. Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea. The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>	
Department/Section of Livestock Management				
1	Wool diameter measuring gauge	1	<p>Measures samples between 15 and 25 μm with accuracy better than 0.8 μm More than 500 measurements should be taken from a fully charged battery Carry case along with a comb, scissors, ACDC charger, sample holders, USB cable, operating manual and cd Power Input: 100~240VAC or 12VDC Warranty – 12 months</p>	Local/Imported
2	Creep	1	<p>For feeding of lambs/kids Dimension: 4*4 feet Walled by Galvanized iron pipe Covered manger inside Equiped with feeding implements like Feeders (for hay, grain, fodder) and drinker</p>	Local/Imported
3	Body measurement taps	3	<p>Large ruminants (cattle, buffalo) measuring tap (1 No.) Tape should be thick, durable, vinyl coated fiberglass that accurately estimates the weight of cattle in pounds or kilograms. The total length of the body/weight measuring tape is 2.5 meters. The weight range for beef cattle is 268kg to 1080kg and for dairy cattle is 35kg to 1000kg. Small ruminants (sheep and goat) measuring tap (2 Nos.) Tape should be thick, durable, vinyl coated fiberglass that accurately estimates the weight of sheep and goat)</p>	Local/Imported
4	Hoof Trimmer (Large+ Small)	5	<p>Hoof trimmer large and small For trimming hooves of cattle sheep, goat (farm animals) sharp hoof shears and a hoof knif Length: 20.5cm, Hand grip: 12.5cm, Mouth grip 2.5cm High quality galvanized iron</p>	Local/Imported
5	Fodder Cutter	1	<p>Heavy duty toka machine with sharp blades with electric 2-3 Hp motor fitted, 5 Foot length stand material iron and metal used can cuts more than 1000 kg per hours Best for Buffalo, cows and Goat Farms,</p>	Local
Department/Section of Livestock Products Technology and Dairy Technology				
1	Gerber's Centrifuge	1	<p>Multipurpose centrifuge for all types of butyrometers with digital LED display indicating the speed, time and temperature, Stainless steel housing, Programmable rotor speed from 600 to 1130 rpm, Programmable heater up to 68C, Programmable centrifugation time from 1 to 99 min, automatic interlocking safety lid, automatic shutdown in case of unbalance, automatic brake, Power supply:230V/50 ...60 Hz/1200 VA, Empty weight 26 kg, Total height with lid 460 mm, Warranty: 2 years Accessories:</p>	Imported

			<p>Head A: Centrifuge head (radius 260 mm) for a maximum of 36 butyrometers buckets and 18 Babcock buckets. butyrometers bucket and Babcock bucket, butyrometer stand.</p> <p>Head B: Centrifuge head (radius 190 mm) for a maximum of 8 Majonnier tubes, Majonnier tubes and stand.</p> <p>Head C: Centrifuge head (radius 190 mm) for a maximum of 6 buckets for solubility index tubes. Bucket for solubility index tubes, solubility index tubes.</p> <p>Water bath: Temperature range: up to 100°C, Connection value: 230 V/50 Hz, Capacity: 10-12 L, digital display of temp. Warranty: 2 years</p> <p>Butyrometers: Milk butyrometers (6 No): 0-10%, Cream butyrometers (6 No): 0-60%, Cheese butyrometers (6 No): 0-40%. Babcock bottle for cream (6 No):0-20%, Babcock bottle for cheese (6 No):0-60%. Corks for butyrometer: 50</p>	
2	Gerber's Tubes	1	<p>Gerber tubes: Milk butyrometers (1 No): 0-10%, Cream butyrometers (1 No): 0-60%, Cheese butyrometers (1 No): 0-40%.</p>	Imported
3	Peeler	1	<p>Body made of SS square pipes, Drum made of SS with abrasive material applied on its inner surface, Peeler material inside the walls should be Emery stone, Rotating disc at the bottom of the drum, Opening for removal of the product after peeling, Water spray arrangement from the top, Suitable drive mechanism to rotate the disc. Feed hopper & discharge hopper made in SS, Top lid, water and waste discharge pipe etc. Control Panel with timer for operation of the machine.</p>	Local/imported
4	Baking Oven	1	<p>3 deck gas baking oven: Each deck should work separately with separate control, Forced air convection, Chamber capacity mini. 60 liters, Stainless steel interior, Housing: stainless steel, LED digital display, Power failure control system, Real time clock, Voltage : 220V/50Hz, Power: 400W, Temperature : 0-300°C, mini Tray size : 400×600×300 mm, mini Product size: 1800×890×1890 mm, Gas pressure : 2800. Warranty: 2 years Accessories: Dough making machine, proofer chamber, stainless steel moulds for bread, Slicer, cakes, muffins, biscuits and pizza trays etc.</p>	Local/imported
Department of Meat Technology				
1	Automatic scalar	1	<p>Specifications: Function: An automatic machine that removes scales from fish Portable Material: Stainless steel/ Aluminum alloy Capacity: 30-50 fish at once Packing: The machine should be wrapped in plastic film first before packing to avoid moisture. Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.</p>	China/ Pakistan
2	Feather plucking machine	1	<p>Specifications: Function: Removal of feathers of poultry birds Material: Stainless steel/ Galvanize steel Motor Power: 1500W-2200W Voltage: 110-220V ((In case of 110V, an additional transformer is needed) Weight: 40-60 kg Capacity: 3-8 Chickens Rotation Speed: 1400 r/Min Fingers: 90-185 rubber fingers Packing:</p>	China/ Pakistan

			The machine should be wrapped in plastic film first before packing to avoid moisture. Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.	
3	Meat Slicer	1	<p>Specifications: Meat slicing machine and a freezer Function: Use to slice frozen meat Material: Stainless steel/ Aluminum alloy Power: 600-800W Voltage: 110-220V Cutting thickness: 0-18mm Blade diameter: 300-350mm Cutting Speed:30-50 piece / minute 1 Deep freezer</p> <p>Packing: The machine should be wrapped in plastic film first before packing to avoid moisture. Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.</p>	China/ Pakistan
4	Butchering sets (knives etc.)	1	<p>Specifications: 8 pieces butchering knife set Material: stainless steel blades 8-10 Piece Cutlery Roll Cut-resistant glove (level 5) 1 weighing scale with 50-70 kg capacity</p>	China/ Pakistan

Signature: _____

Designation: _____

Dated: _____

Stamp: _____

Technical Evaluation Criteria

The Technical proposals shall be evaluated by the technical evaluation committee in the light of following evaluation criteria:

Category	Description	Points
Legal (Mandatory)	Certificate of Company/Individual / Firm Registration/Incorporation under the laws of Pakistan.	Mandatory
	Valid Income Tax Registration.	Mandatory
	Valid General Sales Tax Registration (Status = Active with FBR as on the date of submission)	Mandatory
	Submission of undertaking on legal valid and attested stamp paper that the firm is not black listed by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector.	Mandatory
Eligibility Criteria	Organization anywhere in Pakistan. Must have 3 Years' Experience	Mandatory
	Compliance to the technical specifications of all items to be procured.	Mandatory

Mandatory Note:

- Verifiable documentary proofs for all above requirements are mandatory.
- Vendor/ Supplier will be responsible for installation and configuration of the supplied equipment in client environment as per client's requirements (where necessary)
- Brand and Model Number of quoted equipment must be mentioned. (Where applicable)
- Technical Brochures of quoted equipment must be attached. (Where applicable)

PROCUREMENT OF LABORATORY EQUIPMENT
TECHNICAL PARAMETERS

Category	Description		Marks
Relevant Experience (Max points 15)	3 to 8 years		5
	9 to 14		10
	15 and above		15
Financial (Max points 25)	Annual Turnover	Rs. 1 million	5
		Rs. 2 million	10
		Rs. 3 Million and above	15
	Audited Financial Reports	For the Past 3 Years	5 (1.67 per year)
	Income Tax Returns	For the Past 3 Years	5 (1.67 per year)
Relevant Projects in Govt. public sector university and Semi Govt. Departments (Minimum 03 Projects)	Cost of 3 Projects in the Past 5 Years Each project carries 10 Marks	Rs. 3 million and above	30
Human Resource (Max points 20)	Total Number of Employees including minimum 3 Designer / Professional	0 – 10	10
		20 – 30	15
		31 and above	20
Company Website	Accomplished with Complete Products and Details		5
At least 1 Repair / After Sale Service Satisfactory Certificate from Semi Government / Government Departments			5

Note:

- Verifiable documentary proofs for all above requirements are mandatory.
- Vendor/ Supplier will be responsible for transportation and installation of equipment in client environment as per client's requirements. (Where applicable)
- Sample may be provided within 7 working days if required.
- Passing marks will be 50 for technical qualification.

Convener Technical Committee



FINANCIAL PROPOSAL

TENDER NO. 16/2022

TENDER DOCUMENTS

LABORATORY EQUIPMENT

LOT No. 1

Lot #	Name of item	Qty	Specifications	Origin/Make	Unit price inclusive all taxes (M)	Total price inclusive all taxes (M)
Department of Veterinary Anatomy and Histology						
1	Rib cutter	3	Packing 1 Quantity Per Pack 1 Finishing MAT Automation Grade Manual Material Grade 410 Material Steel Is It Portable Portable Finish MAT Grade 410 Sterilization YES	Local/China		
2	Rib shear	3	Low maintenance Robust structure Excellent strength User friendly Simple design Enhanced durability	Local/China		
3	Rotary Microtome with accessories	1	Section Thickness 0.5-60 µm Total Horizontal specimen feed: 25mm Vertical specimen stroke; 59mm Microtome Razor Stainless Steel Specimen orientation XY- ±8 Power Source Electricity/manual Accessories All accessories, 200 Microtome S.S blades	Germany/Equivalent		
4	Automatic knife processor	1	Usage: Knife sharpening machine Brand: well-reputed Type: Automatic Grinding Material: Metal	China/Local		
5	Hone with surfaces	1	Hone length capacity (power stroke) 305 mm Honing speed (general) 80 & 160 Rpm Honing speed (with inverter) step less 0 to 160 Rpm Max Cylinder block length 1000 mm Electric motor 2 hp (3 phase) Stroking speed 0-60 SPM	China/Local		
6	Stropping leather	2	Use for sharpening of lab instruments	China/Local		
7	Hollow organs (animal models)	1	Canine torso model with complete organs	Advanced countries		

8	Dissection microscopes	1	<p>Magnification Zoom objective 7X-45X</p> <p>Eyepiece Optional Eyepiece 15X/15mm, 20X/10mm, 25X/9mm, 30X/8mm</p> <p>Main Body Binocular head, 45° inclined, 360° rotatable, can be locked in any position desired.</p> <p>Objective 0.7X-4.5X stereo zoom; Zoom Ratio:6.4:1</p> <p>Focusing Mount Focusing mount with vertical working distance 50mm</p> <p>Stand Vertical Post: 240mm ; Diameter: φ32mm; With φ95mm B/W Plastic & Perspex Plate and Paired Clips; Base Size: 200x255x60mm</p> <p>Illumination Transmitted and reflected 12v/15w halogen; *LED illumination</p> <p>C-Mount SZM 1X C-Mount; *SZM 0.5X C-Mount; SZM 0.3X C-Mount</p> <p>Accessories: Yes</p>	Advanced countries		
Department/Section of Veterinary Physiology						
1	Wintrobes sets.	12	<p>Reusable blood sedimentation tubes suitable for determining sedimentation rates and the volume of packed red blood cells.</p> <p>Thick walled, cylindrical, and 11 with internal bore diameter of 2.5 mm</p> <p>Graduations from 0-10 in both upward and downward direction</p> <p>Provided with wintrobe stand</p>	Must be of reputed brand		
2	Stimulators	1	A part of Kymograph	USA/ Japan/France/Germany		
3	Catheters (solstice)	12	<p>Feline Catheter, Equine Catheter</p> <p>Mare: 8.0 mm X 700 mm, -PVC, Sterile, Luer Hub, Plastic, Catheter, Mare Equivet, 8.0 mm</p> <p>Stallions: Catheter, Stallion Equivet, 6.5 mm, 6.5 mmX1350 mm, -transparent PVC, -sterile, -Luer hub, Canine Catheter, Description: Canine urinary catheters, 3,3X600 mm</p>	Must be of reputed brand		
4	Electrocardiogram (portable)	1	<p>Animal Portable electrocardiogram appreciable:</p> <p>Frequency 25-50Hz</p> <p>1. Sync sampling, digital signal processor, gets better quality ECG waveform by ECG signals filtering through the power frequency filter, baseline filter and EMG filter.</p> <p>2. Display 3/6/12-lead ECG waveform, and states of print mode, sensitivity, paper speed, filter, etc. in one screen, convenient for contrastively diagnosing.</p> <p>3. Multi-print mode and format: manual and automatic 4x3, auto 3x4+1, auto 3x4, auto 2x6+1, auto 2x6, auto 3-2+1, auto 3-2, auto 1x12+1, auto 1x12, rhythm 4, rhythm 3 and</p>	USA/ Japan/France/Germany		

			<p>rhythm2, etc. Waveform length can be adjusted and timing print function is available, which meets the need of different applications.</p> <p>4. Built-in high-capacity memorizer can store up to 1000 cases, which is convenient for doctor's review and statistic.</p> <p>5. The interface languages including: English</p>			
Department/Section of Biochemistry						
1	Refracto meter	1	<p>Measurement range nD: 1.32000-1.58000 Accuracy nD (\pm): 0.0002 Repeatability nD (\pm): 1e-005 Measurement range Brix: 0-100 % w/w Accuracy Brix: 0.014 % w/w Temperature control range: 5 °C – 75 °C Temperature control accuracy (\pm): 0.03 °C Minimum Sample volumes: 0.50 mL (0.5 mL) Measurement Scales: Refractive Index, Sugar (Brix and more), Acid/Base, Chemical, Freezing Point, Salt, Others; Up to 30 user-defined concentration tables (can be entered as tables or formulas). Built-in Measurement Scales: Others; Chemicals, acids, bases and freezing point tables; Refractive Index; Brix / Sugar tables Connectivity: HDMI (Terminal); USB client (PC Software); Ethernet (Network and PC Software); 3 × USB host (printer, memory stick, barcode reader, hub, keyboard, mouse); RS232 (Automation units); CAN (Multiple LevelSens) Product Type: Benchtop refractometer Compliance/Data Security: Audit Trail (requires LabX software); Data integrity (requires LabX software); 21 CFR part 11 / EU Annex 11 (requires LabX software)</p>			
2	Polari meter	1	<p>Principle: Automatic digital polarimeter with symmetric angular oscillation using the optical-null balance method Light Source: Tungsten-Halogen lamp (WD), Sodium lamp (Na), Mercury lamp (Hg) (Up to two light sourcess can be installed.) Modulator: Faraday cell Wavelength: 253, 280, 296, 313, 302, 325, 334, 365, 405, 436, 546, 578, 589, 633, 880 nm Aperture: 1.8, 3 and 8 mm diameters Angular Range: $\pm 90^\circ$ Response Speed: 6°/sec Measurement Accuracy: $\pm 0.002^\circ$ (up to 1°) Repeatability: $\pm 0.2\%$ (larger than 1°) 0.002° Resolution: 0.0001° Integration Time: 1-100 sec Detector: Photomultiplier tube (1P28-01) (R928 - option) Readout Modes: Optical rotation, optical specific rotation, concentration, sugar scale Z, Brix purity, optical purity</p>	USA/ Japan/Franc e/Germany/ China		

			Temperature Measurement Range: 0~40°C (minimum display temperature: 0.1°C) Power Requirement: AC100~240V ±10%, 50 or 60 Hz, 80 - 300 W Dimensions: 653 (W) x 249 (D) x 364 (H) mm Weight: Approx. 30 kg			
Department/Section of Veterinary Pharmacology						
1	Colter Counter	1	Particle size range of 0.3 to 10µm, Lightweight and ergonomic design, 10 hours of standard-use battery life, 10,000 records stored, View data in traditional tabular or trend graph, Configurable display, sample methods, & alarm setting, Data export to USB or PC, Internet-enabled and meets ISO, JIS, and CE standards	Local/Imported		
2	Anesthetic Monitor	1	12.1" inch colored display, parameters: SpO ₂ , ECG, NIBP, TEMP, RESP, Suitable for dogs, cats, and horses, 72 hours of graphic and tabular trends, 32 seconds full-disclosure waveform review, Built-in rechargeable lithium battery, Power supply: AC85~265V/50Hz/60Hz	Local/Imported		
Department/Section of Veterinary Microbiology						
1	Sites filter (assemble including sites filters etc.	1	Sites filter filters are asbestos pads provided with metal holder and assembly system with vaccum pump, EK-grade which retains bacteria, for separation of viruses from bacteria , Approximate size of the virus, Sterilization of certain thermo-labile material	USA/Europe		
2	Freeze Dryer Machines (with oxyflame sealer, compete set for small vials)	1	STFD-10B, Drying Chamber type, Standard type, Ice Condenser capacity 3Kg/24h, Final condenser Temperature ≤-60°C, Effective shelf area 0.1m ² , Shelf layers 4, Shelf tray dimension Diameter Φ210 mm Φ180 mm, Height between shelves 50mm, Shelf heater optional, Refrigerant system, Refrigerant gas, Mixed CFC free, HCFC-free, Number of compressors 1, Cold trap cooling rate, 20°C to -40°C ≤30min (no load), Controller, 5 Inch color touch screen controller with LyoWise operation System, Freeze-drying Process, User Programable Optional, Data Storage Yes, USB port Yes, RS232 port Yes, Auto defrost Yes, Power Voltage 220v50hz, 220v60hz, 110v60hz, current Main unit 5A, Total power 1250W, Vacuum pump Yes, Vacuum degree ≤5Pa (no load), Vacuum pumping rate, from standard atmospheric pressure to 10Pa≤10min (no load), Vacuum rate 2L/s, Main unit, Vacuum leakage, 3x10 ⁻² pa L/s, Material 304, Condenser trap material SUS304, Sensor type PT100, Material sensor ±4, External dimensions (L×W×H) 610*610*460mm, Weight 90 kg.	USA/Europe/ Germany/equal		

3	Sonicator	1	SDS-3, S-DS-3, Tank Size (mm) 240x140x100, Overall Size (mm) 270x170x240, Volume (L) 3L, Adjustable Heating 0-80°C, Handle Y, Drain N, Lid/ Basket Y	USA/Europe/ Germany		
4	Punch for AGPT	1	Punches for gel cutting with suction 3.5 mm circular junks out of gel to prepare wells for antigen-antibody interaction based agar gel precipitation test	USA/Europe/ Germany		

LOT No. 2

Lot #	Name of item	Qty	Specifications	Origin/ Make	Unit price inclusive all taxes (M)	Total price inclusive all taxes (M)
Department of Veterinary Parasitology						
1	Dissection microscope	3	Binocular viewing head, inclined at 45°, 360° rotatable, Inter pupillary adjustment distance 54-76mm, left Eye piece WF 10/20 mm, magnification 20x, 40x, Working distance 100mm, head mount 76mm, dual light	Advance Country		
2	McMaster Counting Chamber	12	For counting worms eggs, suitable for solid media, dimensions: approx.. 75 X 25-32 mm, cover glass with 2 counting grids approx.. 10 X 10mm (divided into 10 parts) affixed on 3 supports, distance between bottom plate and cover glass: approx.. 1.5mm, Gride size:10mm X 10mm, WD: Requires at least 0.5mm working distance	Advance Country		
Department of Veterinary Pathology						
1	Specimen slides of various histopathological lesions. (100 slides)	1	Set of 100 prepared microscopic veterinary pathology slides for veterinary medicine education study Different cases with a confirmed diagnosis Slides with Hematoxylin and Eosin (HE) stained samples	USA/Europe/ Germany/ China/equal		
2	Heavy duty rotary/autopsy saw for large animal P.M with assembly	1	<u>A- Rotary/Autopsy saw</u> Single press on/off operation Efficient 13,200 Oscillation per minute cycle Watertight to IP67 rating Flexible silicon hood for improved visibility Operates on safe 40 Volts Reduced overloading via electronic current limiting, device double pole fused Easy blade rotation and fixation Extra blades of different sizes <u>B- Roatory mictome</u> for tissue sectioning Section Thickness Range: 1 - 60 µm Trimming Thickness Range: 5 - 500 µm Power source Electricity/Manual With all accessories	USA/Europe/ Germany/eq ual		
3	Microtome, blade (100), Tissue castes/rings, S.S L mold	1	High quality S.S blades (100 blades) for rotary microtome 3 × 2.5 × 0.4 cm Plastic tissues cassettes (1000) for tissues processing 3 x 2.4 x 0.5 cm stainless steel mold (100), non-stick with Nano-layer coating for faster cooling	Local/imported		

4	Dark field illumination with projecting units	1	All projecting units Head: Binocular or Trinocular 60 degree rotatable Eyepieces: 10x/22mm Both focusing Nosepiece: Quadruple/5 Place Nosepiece Objectives: Plan Phase E Plan 4x, 10x, 20x, 40x, 100x Oil Stage: Graduated mechanical XY Condenser: Darkfield Oil or Darkfield Dry Condenser, Phase turret condenser - brightfield, ph1, ph2, ph3, darkfield Focusing: Coarse & Fine Illumination: Halogen w/ blue filter Warranty: 5 Year	Imported/USA/Europe/Germany		
5	Wintrob's pipettes	1	Additional attributes: Self Zeroing Disposable/reusable/reposable: Disposable Graduation: Graduated Material : Glass/Polystyrene Primary LWH: 150mm (Quantity : 100/Box) CLIA Complexity: Waived	Imported		
6	Hemocytometer	10	Reusable hemocytometer cell counting chamber for counting cell densities Cell depth: 0.100 mm Volume: 0.1 Microliter Ruling Pattern: Improved Neubauer, 1/400 Square mm Include 100 22x22 mm glass cover slips	Imported		
7	Hemoglobin meter	10	Digital Hemoglobin meter Time to Results: < 15 seconds Memory : 1,000 tests with date/time and ID number Specimen Type: Capillary and Venous whole blood Power Source: Batteries / Adapter Include 100 strips	Imported/USA/Europe/Germany/equalient		
8	Slide cabinet 5000 capacity with histopathology slides	1	Material: Wooden Usage: to keep microscope slides safe No. of Slide: 5000 Finish: Painted	Local/Imported		
9	Cold Room	1	Cold Storage room Room dimensions: Height: 11 feet, Width: 9 feet Length: 10 feet Temperature Range -10°C to 25°C	Imported/Local		
10	Protective wear (gloves, rubber, apron goggles gum boots, masks & cap etc.)	1	Positive pressure protective suits/space suits/moon suits/blue suits" (02) Disposable surgical caps(1000) Disposable Surgical Gloves (1000 pairs) Rubber Gloves (50 pairs) Disposable Face mask (1000) Ear plugs (100 pairs) Laboratory aprons (24) Laboratory coats (12) Laboratory Goggles (12) Plastic safety Gum boots (12 pairs) Disposable Shoes cover (1000 pairs)	Imported/Local		
Department/Section of Veterinary Medicine						
1	Phonendoscopes	1	Chestpiece Machined Stainless Steel Two-sided Binaurals Single Lumen. Tunable Diaphragm. Headset Material Alloy. Length min. 28 in/71 cm Diaphragm Diameter min. 1.75 in/4.4 cm	Local/imported		

			Bell Diameter min. 1.25 in/3.2 cm			
2	Blood-pressure monitors	1	Oscillometric Blood Pressure Range: Systolic: 40 – 265mmHg Diastolic: 20 – 200mmHg Mean Arterial Pressure: 27 – 222mmHg Heart Rate: 25 – 300BPM Pulse Rate Range:25 to 300 BPM (Beats Per Minute) Cuff Deflate Rate: Deflation variable step size. Initial Inflation Pressure:180 mmHg (default). Subsequent initial inflation: previous Systolic + 30 mmHg Transducer accuracy:±3mmHg between 0 mmHg and 300 mmHg Operating Conditions:0°C to 50°C, 15% to 90% non-condensing humidity Power: Lithium-Ion battery. A/C Power Adapter - Input:100-240v ~ 47-63Hz 0.48A Max, Output: 5.9V 3A 17.7W Max with battery	Local/imported		
3	Otoscopes with Accessories	1	The ear specula of 3 different sizes 2,3,4 diameter at tip. Illuminating device with condensing lens and a 2 times magnifying glass.	Local/imported		
4	Laryngoscopes	1	with fibre optic light source on either side. Sealed LED light source Waterproof handle Complete set with handle and 5 blades. blades available in 300 mm (12") and 350 mm (14") (for large dogs, sheep, goats and zoo animals)	Local/imported		
5	Oesohagoscopes	1	Fiber optics ring of light with no reflections, no obstructions. autoclavable stainless steel Graduated tube with removable and cleanable tip. Oesophagoscope min. Length 45cm Dia 16mm	Local/imported		
Department/Section of Veterinary Surgery						
1	Pedestal Surgical lights	1	5-reflector OT light mobile with stand. Illuminance: 735- 50000Lux Color Temperature: 4300±200k Color rendering index: Ra≥90 Rated Voltage of Bulb: 24V Diameter of luminous spot: 100-250mm	Local/Imported		
2	Dressing drum small	1	Domed top and bottom with sliding removable band, and drop down-hasps Size approx. 6" (Dia.) X 6" (Height).	Local/Imported		
3	Dressing drum large	1	Domed top and bottom with sliding removable band, and drop down-hasps Size approx. 11" (Dia.) X 9" (Height).	Local/Imported		
4	Orthopedic Instruments, large animal	1	Human Hard tissue kit is also appreciable 1. Senn miller Retractor 16 cm blunt 2. Army Navy orthopedic retractor with three hooks 3. Mallet blunt ended 8 X 12 mm and 13 X 45 mm 4.Hohmannsmall, medium and large curved tip 5. Gelpi Perinal and orthopedic retractor 6. Finochietto cardiovascular chest retractor 7. Weitlaner retractor 8. Balfour abdominal retractor 180 mm	Local/Imported		

			<p>9. Lambert Rongeur 158mm</p> <p>10. Bone Plate modification equipment (2 types)</p> <p>11. Curette small, medium and large sized</p> <p>12. Electric Cast Cutter (Oscillating Saw)</p> <p>13. Lane Bone holding forceps</p> <p>14. Reduction bone holding forceps</p> <p>15. Lewin Bone holding forceps</p> <p>16. Wolford bone holding forceps</p> <p>17. Periosteal elevator small, medium and large size</p> <p>18. Chisel small, medium and large</p> <p>19. Gigli saw wire</p> <p>20. Jacob's Chuck with Key & guard</p> <p>21. Orthopedic Hammer</p> <p>22. Pin Cutter small, medium and large</p> <p>23. Wire Cutter</p> <p>24. Wire Twister</p> <p>25. Electric / Battery Driven Drill Machine</p> <p>26. Drill Bits (2.5, 3.2- & 4.5-mm Diameters)</p> <p>27. Drill Sleeve for 2.5, 3.2- & 4.5-mm Drill Bits</p> <p>28. Drill Sleeve with external diameter of 4.5mm</p> <p>29. Cortical Bone Taps 3.5 & 4.5 Diameter (T-Handle)</p> <p>30. Cancellous Bone Tap 6.5mm Diameter (T-handle)</p> <p>31. Tap Sleeve for 3.5- & 4.5-mm Bone Taps</p> <p>32. Depth Gauge</p> <p>33. Counter-Sink for 3.5- & 4.5-mm Cortical Screws</p> <p>34. Screw Driver for screw driver mentioned below diameter Cortical Screws</p> <p>35. Load Guide for 2.5- & 3.2-mm Drill Bits</p>			
5	Endoscope, small animal	1	<p>Clinical Veterinary Purpose:</p> <p>Small animal endoscope (Including scope, light source with light guide cables, processor, suction and irrigation pump, metal trolley, and Monitor 27 inch)</p>	Local/Imported		
6	X-ray accessories cassettes and different Chemical	1	<p>X-ray Cassettes with appropriately sized 100 film packs:</p> <p>Small: 3" (7.6 cm) H x 4" (10.2 cm) W x 10" (25.4 cm) L</p> <p>Medium: 5" (12.7 cm) H x 7" (17.8 cm) W x 15" (38.1 cm) L</p> <p>Large: 7" (17.8 cm) H x 11" (27.9 cm) W x 24" (60.9 cm) L</p> <p>Suitable SS clips, 3 tanks of 5gallons developing tanks with lid, safelight, Developer & fixer solution.</p>	Local/Imported		
7	Emasculator for equines	1	<p>Emasculator Double Crush (Whites or Serra) sized around 12.5". Must</p>	Local/Imported		

			simultaneously perform clamping, crushing and cutting of spermatic cord.			
8	Trephine	1	Galt Skull Trephine, with adjustable centering point and detachable 19mm cross-bar handle	Local/Imported		
9	Otoscope	1	Human Otoscope is also applicable. The ear specula are supplied in 3 different sizes 2,3,4 diameter at tip. Inexpensive basic model with low-reflection, direct illumination with a 2.7 V vacuum bulb (2500 K) or halogen illumination (3000 K)	Local/Imported		

LOT No. 3

Lot #	Name of item	Qty	Specifications	Origin/Make	Unit price inclusive all taxes (M)	Total price inclusive all taxes (M)
Department/Section of Animal Reproduction						
1	Electro-ejaculator	2	<p>C- Electro ejaculator Large Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Electro ejaculator probe, Ø: 2/5'' / 6.35 cm; length: 40 cm; 3 electrodes Manual adjustable pulse/pause ratio/pulsator, Control unit for pulse adjustment, Probe cable, Power supply cable, Remote control with cable, Power output with 4 different types of curves enabling balanced setting, according to the animal size and sensitivity, Probes insulation, for highest safety for the operator and the animal, Emergency power cut off system, Whole unit with robust plastic carry case for each part for mobile use Digital power control with microprocessor, 3-digit digital display for the indication of the power output (display values from 0–20 with a resolution of 0.5 units), Semen collection funnel and holder according to the large animal along with AV cone, Operational on 220 volts 12 V extended power supply source Connecting cable for external battery Time delay stabilizer</p> <p>D- Electro ejaculator Large Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Electroejaculator probe, Ø: 1'' / 2.54 cm; length: 16 cm; 3 electrodes Manual adjustable pulse/pause ratio/pulsator, Control unit for pulse adjustment, Probe cable, Power supply cable, Remote control with cable Power output with 4 different types of curves enabling balanced setting according to the animal size and sensitivity, Probes insulation, for highest safety for the operator and the animal, Emergency power cut off system, Whole unit with robust plastic carry case for each part for mobile use</p>	USA/Europe/ Germany or Equivalent		

			<p>Digital power control with microprocessor, 3-digit digital display for the indication of the power output (display values from 0–20 with a resolution of 0.5 units), Semen collection funnel and holder according to the rams/bucks along with AV cone Operational on 220 volts, 12 V extended power supply source Connecting cable for external battery Time delay stabilizer</p>			
2	Artificial Insemination Accessories	1	<p>-Embryotomy Instruments set (Made up of stainless steel and containing the following items; Smellie Perforator, Beacham, Green Armlage, Braun, Braun Crainioclast, Kelly, Simpson Braun, Sims) for large and small animals one each</p> <p>-Vaginal Clamps (large and small) Thermos flask (Stainless steel and maintain the temperature for at least 6 hours) -Nose tongs made up of stainless steel -Wooden stand for LN containers (6ft x 3.5ft x 1ft) -Rinsing cans (Plastic cans 19L) -Holmes needles -Metal funnels for pouring LN into containers</p>	USA/Europe/ Germany or Equivalent		
3	Artificial Vagina for buck	15	<p>(C) Artificial Vaginas for Bucks/Rams: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Outer core of \approx 18-20 cm, Inner liner imported (Four rough neoprene inner liner and one plain neoprene inner liner), Valves and rings, AV cone (good quality latex), KY Jelly tube Pressure hand pump, Valves should not be loosened when hot water is to be injected in AV, Leather jacket for maintaining temperature of the AV accordingly</p> <p>(D) Artificial Vaginas for Bull: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Outer core of \approx 42-45cm cm, Inner liner imported (Four rough neoprene inner liner and one plain neoprene inner liner), Valves and rings, AV cone (good quality latex), KY Jelly tube Pressure hand pump, Valves should not be loosened when hot water is to be injected in AV, Leather jacket for maintaining temperature of the AV accordingly. With leather jacket compatible to artificial vagina and collection vial cover</p>	USA/Europe/ Germany or Equivalent		
4	Cold cabinet	1	<p>Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Horizontal cold cabinet customized for refrigerated workspace for frozen semen straw production. The worktable should be useable to house the semen straw filling and sealing system, or for the equilibration of straws. The horizontal cold cabinet should be used to conveniently lower the temperature of a</p>	USA/Europe/ Germany or Equivalent		

			<p>workspace to refrigeration 4°C temperature at least.</p> <p>Ergonomic design for ample, easy access from all sides that can be completely covered with easy-to-use rolling covers. It should be easily movable from one to other place.</p> <p>With semen straw stainless steel racks (N=30)</p> <p>With stainless steel bubbler dish stand (N=3)</p>			
5	incubator temp control	1	<p>Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). Temperature range ambient +5°C to 60 °C * 0.1 °C resolution, temp control, thermos state digital</p> <p>Incubator interior and exterior stainless steel</p> <p>Highly sensitive microprocessor PID-Temp control</p> <p>Extremely accurate, ideal for all applications with temperatures.</p> <p>Ambient +5 °C to +70 °C with natural convection, digital LED display of set and actual temperature</p> <p>Double door interior</p> <p>Glass and exterior stainless steel with integrated auto diagnostic system, integrated digital timer (1 minute up to 99 hours 59 minutes)</p> <p>Capacity 75 liters</p> <p>Complete with two stainless steel shelves operated on 220 V.</p>	USA/Europe/ Germany or Equivalent		
6	Automatic straw printing, filling and sealing machine	1	<p>51) Automatic Semen Straw printing Machine: Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent)</p> <p>Should print the straw with advanced high adhesion ink</p> <p>Easy readable & affordable coding</p> <p>Easy adjustable micrometric print – head fixture for top & bottom, front & back positioning of print-head for accurate results</p> <p>Should have automatic straw counting unit</p> <p>Printing capacity of 1 to 3 lines per straw</p> <p>Printing of barcodes, logos and special characters</p> <p>Clean and odorless working</p> <p>Print speed: 35 pprox.. 3400-8000 straws/hour</p> <p>Electrical connection: 110/230 V, 50-60 Hz</p> <p>Unmatched neat and clear printing on 0.5- and 0.25-ml straws</p> <p>Up to 3 lines with a total of about 200 characters, even on Mini Straws</p> <p>Printing of barcode signs, logos and specific characters</p> <p>Immediately non-abrasive print</p> <p>Control via PC by a clear and user-friendly software</p> <p>Sequential numbers can be printed on straws</p>	USA/Europe/ Germany or Equivalent		

			<p>Adjustable character fonts and graduations from micro to macro</p> <p>Freely eligible number of lines and of printing positions</p> <p>B) Straw Semen Filling Machine: Should be from advanced countries (America/Canada/Europe/Japan origin or equivalent)</p> <ul style="list-style-type: none"> -Filter and Vacuum Pump - Pump connection tube - 20 straws Clip 0.25ml - 15 straws Clip 0.5ml - 0.25ml filling nozzle with 15 pins - 0.5ml filling nozzle with 15 pins - 0.25ml bubbler with filling nozzle - 0.5ml bubbler with filling nozzle -straw comb (N=150) - bubbler dishes (N=500) <p>C) Semen Straw Sealing Machine: Should be from advanced countries (America/Canada/Europe/Japan origin or equivalent)</p>			
7	Liquid Nitrogen Cylinder	1 set each	<p>D) Should be of advanced country</p> <ul style="list-style-type: none"> -Made up of stainless-steel having capacity of 10-20L -Having six canasters according to container size -Six goblets of high quality that can bear the -196°C temperature -Goblets should be compatible to canaster size -Daily Evaporation (0.10 L/Day) -Static Holding Time (93 Day) -Dynamic Holding Time (93 Days) -Max Capacity of 0.25 ml straw 1560 -Max Capacity of 0.5 ml straw 720 <p>E) Should be of advanced country</p> <ul style="list-style-type: none"> -Made up of stainless steel having capacity of 47-50L (N (Narrow neck)=2 and N (wide neck)=3) -Daily Evaporation rate 0.27 lit / day -With 10 Nos of Canisters Stainless Steel (double straw placement) -Static holding time : 180 Days, Maximum Capacity for 0.5 MI Straw 7300 -Twenty goblets of high quality that can bear the -196°C temperature -Goblets should be compatible to canaster size <p>F) Should be of advanced country</p> <ul style="list-style-type: none"> -Made up of stainless-steel having capacity of 100-150 liter and wide neck 18 inch and above (N=1) -Daily Evaporation rate 0.27 lit / day -With 6 Nos of Canisters Stainless Steel (double straw placement) -Static holding time : 30-60 Days, Maximum Capacity for 0.5 MI Straw 6000 -Goblets should be compatible to canaster size -SS stands for straw rack vapor freezing 	USA/Europe/ Germany or Equivalent		
8	Power Backup	1	<p>D) 5-10 KVA Generator</p> <p>60 Hz Power Rating:</p> <p>Standby Power Rating: 12 kVA / 10 kW</p>	USA/Europe/ Germany		

			<p>Prime Power Rating: 11 kVA / 9 kW 50 Hz Power Rating: Standby Power Rating: 10 kVA / 8 kW Prime Power Rating: 9 kVA / 7 kW The control panel, service doors and canopy board should adopt a waterproof design and effectively stop rain and dust intrusion There should be anti-vibration mountings between the engines, alternators and the base that significantly reduce the vibrations during operation, ensuring stable operation. The machines should be equipped with monitoring system, helping monitor the operation at real time. There should be the double protection for the cable connection panel that lowers the probability of leakage caused by unintended touch or water intrusion and three-dimensional CABLING design for all the generator cables, providing reasonable, accurate and perfect protection. Automatic turn-on circuit breaker with under-voltage protection system inside maximally avoids mistakes. The radiator and high-voltage parts should be guarded to avoid accidents caused by touch. The control panel should be lockable and current changeover switch, voltage regulator and circuit breakers should be installed behind the door. Anti-vibration rubber mounts should be installed in the two sides of the doors to avoid damage to the machines when open the doors. There should be outer filling fuel port and lockable fuel-filling cap and micro-processor cored digital system. Connected with mains through ATS, which can help realize automatic transfer between the mains and the generators. There should be 8-12 hours based fuel tank in soundproof generator sets. E) UPS 6KVA with lithium Batteries and Solar Panel (N=1): F) CCTV cameras -UHD IP cameras, 5MP, (N=16) with NVR, LED (50 inches) and connection cables (250 meters)</p>	or Equivalent		
9	Hot air oven	1	<p>Should be from advanced countries (America/ Canada/Europe/Japan origin or equivalent). <u>-Stainless steel interior</u> Volume ≈ 449 L Width 1040 mm Height 720 mm Depth 600 mm Max no. of grids 7-8 Max loading grid per shelf ≈ 30 kg Max loading of chamber ≈ 300 kg Max. loading per slide-in drip tray ≈ 8 kg Max. loading per bottom-in drip tray ≈ 8 kg <u>-Stainless steel exterior</u></p>	USA/Europe/ Germany or Equivalent		

			<p>Textured stainless steel exterior Width ≈ 1224 mm Height ≈ 1247 mm Depth 784 mm Stainless steel grids electropolished Working temperature range should be ambient to +300°C Setting accuracy Up to 99.9: 0.1 / from 100: 0.5 °C Electrical load 220 Volts Full sight glass doors Door with lock Stainless steel grids with electropolished Power cable Time delay system stabilizer</p>			
10	Spectrophotometer	1	<p>Photometer for Sperm concentration measurements -Spectral range: 430 – 680 nm -Filter: 546 nm -LED light source -10 mm macro cuvettes -Analysis time: 2 seconds/sample -Digital display: result in billions of sperm/ml -Print out includes the following data: sperm quality and quantity, volume of diluent required and sperm per dose -Electrical connection: 110-230 V/50-60 Hz -Programs for semen concentration measurement of semen of several species and for extinction of light -Automatic calculation of extender volume and number of doses -Large touch screen, easy handling</p>	USA/Europe/ Germany or Equivalent		

LOT No. 4

Lot #	Name of item	Qty	Specifications	Origin/Make	Unit price inclusive all taxes (M)	Total price inclusive all taxes (M)
Department/Section of Animal Nutrition						
1	Photometer	1	<p>Double beam spectrophotometer (UV-Vis) with wide and color LCD screen. Spectral Bandwidth should be 0.5, 1, 2, 4nm. Wavelength Range 190 – 1100nm. Detector Solid Silicon Photodiode, Light Source Tungsten Halogen/Deuterium Lamp. Wavelength Setting should be automatic, Wavelength Accuracy should be ±0.3nm, Wavelength Repeatability should be ≤0.2nm. The instrument should show various scanning curves and charts for users to complete various tests without computers. Support USB storage and different data formats such as Excel, txt and image. The instrument should have advanced hardware and processor. The equipment should have long-life socket type tungsten-halogen and deuterium lamps which can work up to 2000 hours, can switch the lamps according to test needs and record its working time automatically.</p>	USA/Europe/ Germany/equivalent		

			<p>The instrument can be connected to printer directly and output test charts and data. All allied accessories for installation. Laser printer should be supplied with spectrophotometer</p>			
2	Bomb calorimeter	1	<p>Bomb calorimeter: Heat capacity (14000~15000) J/K Resolution 0.001 K Measurement accuracy ≤ 60J/g Display LCD Printer Yes Repeatability error $\leq 0.2\%$ (Grade C) Pressure endurance of bomb 20 MPa Power ≤ 150W, stainless steel inner water cylinder Equipped with electric stirrer in the water tank Double-layer external container High uniformity of water temperature to meet the requirement of test. Temperature: 5-40 degree centigrade, Measuring range: 5 MJ/kg to 40 MJ/kg, Testing time: 8-15 minute, Power supply: 220 volts, Power: 1.5 KW, Oxygen supply: Automatic, Bomb Firing: Automatic/ Button press, Calculations: Automatic, Data storage: Through computer, Whole material: Stainless steel with external water jacket should be double layered, A computer should be attached for data storage, all accessories along with fittings and dust cover</p>			
3	Particles Separator	1	<p>Set of 4 sieves (19mm, 8mm, 3mm and 1.20mm diameter) with tray as base and cover similar to Pen state particle separator</p>	Local made		
4	Silo pits/towers/bunkers models	1	<p>Model of silage Bunkers, silage Trench and silage Tower made up of MS Steel: Bunkers having the dimension of 4x4 feet base divided into 3 parts having the height of wall of bunkers 1.3 foot, Trench having the dimension of 4x3 feet from outer while the inner trench dimension is 3x2 feet and having the collar of 1/2 foot, Towers having the dimension of 2.5x3 feet with circumference of 2 feet with lid at the top of tower and opening at the base.</p>	Local made		
5	Feed formulation Software	2	<p>C- Dairy Feed formulation software Dairy feed formulation software: Registered Windows 08/ 10, also OS apple supporter, should programmed in Microsoft CTM 32 or 64-bit Microsoft or OS Windows applications and were programmed in Microsoft Visual Basic 6.0 or 8.0TM and Microsoft C++ 6.0or 8.0TM with a Microsoft Access 2000TM database capability to store input and output values. Work under Mathematical nutrition model that computes dairy cattle requirements energy and nutrients based on characteristics of the animal, environment and the physicochemical composition of the feeds under diverse production states. Designed as a steady-state model to use rates of degradation of feed carbohydrate and protein and the rate of passage to estimate the extent of ruminal fermentation, microbial growth, and intestinal digestibility of carbohydrate and protein fractions in computing energy and protein</p>	Local/imported		

		<p>post-rumen absorption, and the supply of metabolizable energy/net energy and protein to the animal. Facilitate the characterization of individual feeds and a sub-model to predict ruminal metabolism and intestinal absorption of long chain fatty acids.</p> <p>Can calculates a least cost formula. It should have advanced features like, Parametrics, Formula comparison, Cost Summary (Profit/loss Managed by adding Sale price, Overhead charges etc.), Nutrients Ratio's (Lysine to other Amino Acids). Formula Report available in Notepad, Excel, Word, and pdf format. Amino Acid Calculator (Total and Digestible) just select ingredient and add Crude protein Value). Energy Calculator, just select ingredient and add values of Proximate analysis on a single click it calculate Metabolizable Energy/net energy. Should be compatible with Window 10, 64-Bit.</p> <p>A computer with Processor i5, 10th generation, Ram 8 GB, Storage 256 SSD to run the software.</p> <p>D- Computer with Poultry Feed formulation software</p> <p>The software should be least cost formulator and evaluator. Auto calculate ingredients without leaving stored formula screen, Change plant codes easily, Export data to tables, Database of feed ingredient and cost, Show nutrient composition on percentage of dry matter and fresh matter, It defines the nutrient level required in the formula and feed ingredient inclusion level, Click to copy data from one plant to all plants within same source plant, Click to delete a nutrient from all ingredients, Compare nutrients in new vs. stored formula, Changes from 0 are marked in red, Formula stored date" on optimization main screen,</p> <p>The software should be easy and friendly to be useful for poultry Poultry Feed. Multi-plants (Each plant having specific Ingredients, Nutrients, Formulas store and Ingredients Prices)</p> <p>It should have power to handle unlimited numbers of Ingredients (Ingredients values also automatically set on Moisture Basis on a single click) and Nutrients A high-quality interface to set Ingredients and Nutrients Values and limits. Can import and Export database (ingredients, Nutrients, Composition and Price) between computer. Can calculates a least cost formula. It should have advanced features like, Parametrics, Formula comparison, Cost Summary (Profit/loss Managed by adding Sale price, Overhead charges etc.), Nutrients Ratio's (Lysine to other Amino Acids). Formula Report available in Notepad, Excel, Word, and pdf format.</p>			
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			<p>Amino Acid Calculator (Total and Digestible) just select ingredient and add Crude protein Value). Energy Calculator, just select ingredient and add values of Proximate analysis on a singal click it calculate Metabolizable Energy. Shoul be compatible with Window 10, 64-Bitt.</p> <p>A computer with Processor i5, 10th generation, Ram 8 GB, Storage 256 SSD to run the software.</p>			
6	2D/3D digital video microscope with computer and 50 inch LCD	1	<p>1) Digital video Microscoppe 2) Color Printer 3) LCD 50" inches 4) Desktop computer 1) Digital video Microscope: 2D and 3D observing USB fluorescence magnifier camera microscope, Lens parameter: Optical magnification 0.6-5.0X, Total Magnification11-95X base of 12.5"monitor, Working distance 2D:100mm 3D:75mm Ratio 1:8.3 Field of View24*13.5-2.88*1.62mm Lens Mount Standard C mount, 2D/3D viewer, Support 2D/3D observing 360 °rotation, 45 objective viewing angle Camera Parameter: Image Sensor 1/2", Max magnification 1920 x 1080, Pixel Size 3.75µm x 3.75µm White Balance Manual and auto Brightness control Manual and auto, Memory function Take photo or video to U disk, Output HDMI TYPE, Monitor Parameter: Size 24.0" Type IPS Resolution 1920*1080, Color display 16.7M Brightness 300 cd/m² (Typ.) Contrast 1000:1 (Typ.) Power supply DC : 12V 2A Input HDMI and VGA StandAram stand, Light Source Parameter: Light Control 4 zones control. Brightness adjust Light color White Quantity of LED 208PCS LED Intensity 15000 Lux Wavelength 455-457.5nm Output voltage 12V Output power 8-10W Working distance 35-110mm Material Aluminum alloy DiameterInner diameter 40mm, outer diameter 106mm, height 19mm, Stand Parameter: Focus Coarse focus Base size 330*300mm Height 318mm</p> <p>2) Color Printer: Type: New Flatbed Inkjet Printer, Wi-Fi Accesses, Automatic, USB Aces, Multicolor, A3- A4 simple Paper Printer, Label Printer Voltage: AC 220 V - 240 V, Print speed: BK-30 ppm; Colors-4color CMYK, Printing Resolution5760 * 1440dpi, Paper capacity:</p>	Imported		

			<p>100 sheets, Warranty of core components: 1 Year, With All accessories; Two boxes of all kinds of printer ink.</p> <p>3) LCD 50" inch: TV Type Smart TV USB Port 2.0 Remote Control Audio systems Dolby Digital Remote Control Type Wattage per Speaker Channel (RMS) 10 W x 2 Built-in speakers Standby Power Consumption 0.3 W Package weight in KGs 17.5 Kgs Processor Type Quad Core VESA Mount (400x400 mm) Display Resolution 3840 x 2160 Frequency 50/60 Horizontal resolution 3840.0 Bluetooth Internet connection Integrated WiFi Input voltage 220 – 240 Wireless Standard 802.11ac Operating System Type Tizen WiFi Full HD, HDMI Yes Display Type LED TV Ethernet Display, Screen Size 50 Inch HDTV 4K UHD Connectivity Number of HDMI Ports 3.0 Technical Information Aspect ratio 16:9</p> <p>4) Desktop computer: Minitower case Processor type: Core i3, 10th generation Ram: 4GB Hard drive size: 256 GB SSD Monitor: 1No. (minimum 19 inch) Key board: 1 No. Mouse: 1No. Smart Share FHD 1080P Auto Volume Lever 50-inch display Noise Reduction 2x HDMI</p>			
Department/Section of Poultry Husbandry/Science						
1	Egg grader Machine	1	<p>Specifications: 1-Grading and packing eggs on weight Max. capacity (eggs/hour) 3000 eggs Max. capacity (cases/hour) 8.3 Footprint (L x W) 1540 x 1755 mm Operators 1 or 2 Candling 2 x 23 Watt PL lamp + mirror Grades 4 or 7 Accuracy ± 1 gram Infeed conveyor Double row Power supply 230V 1-phase, 50 or 60 Hz. (In case of 110V, an additional transformer is needed)</p> <p>Packing. Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea. The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>	Advance		
2	Chick Sexing Machine	1	<p>Specifications: The English or Japanese chick tester machine features A blunt-ended endoscopic tube/probe, containing a camera with light. The sexer inserts the tube/prob into the evacuated cloaca and with the help of the camera/light can identify either testis or ovaries.</p> <p>Packing.</p>	China/Advance		

			<p>Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea.</p> <p>The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>			
3	Egg Analyzer	1	<p>Specifications:</p> <p>An electronic scale measures the egg's weight</p> <p>Ultrasound sensors measure the albumen height and yolk color without touching the egg</p> <p>Automatically calculates and classifies the Haugh unit</p> <p>Displays and prints measured values and calculated values</p> <p>High measurement accuracy</p> <p>Constantly stable measurement, not dependent on individual operators</p> <p>Shortens the measurement time to approx.17 seconds per set</p> <p>Proprietary software works with an external PC and allows:</p> <p>Enhanced data storage and retrieval</p> <p>Advanced data processing</p> <p>Superior printing option</p> <p>Characteristics:</p> <p>Albumen height: 0mm - 30mm +/- 0.1mm</p> <p>Yolk color: 1 - 16 according to the DSM (formerly Roche) Yolk color fan (support 16 colors, NEW)</p> <p>Haugh unit: 0 - 130 HU</p> <p>Stores, calculates and averages up to 1000 units of data</p> <p>Displays results on LCD screen</p> <p>Built-in printer (uses an off the shelf thermal paper)</p> <p>Suitable to worldwide voltage supply: 90 - 230V, 50/60 Hz</p> <p>Proprietary software for external PC operation via USB communication cable</p> <p>Dust Cover</p> <p>Packing.</p> <p>Machines are wrapped in plastic film first before packing, which is to avoid moisture on the sea.</p> <p>The machines are putted in strong iron sheet case/wooden case which is free of fumigation, lined with metal wire if necessary.</p>	Advance		
Department/Section of Livestock Management						
1	Wool diameter measuring gauge	1	<p>Measures samples between 15 and 25 μm with accuracy better than 0.8 μm</p> <p>More than 500 measurements should be taken from a fully charged battery</p> <p>Carry case along with a comb, scissors, ACDC charger, sample holders, USB cable, operating manual and cd</p> <p>Power Input: 100~240VAC or 12VDC</p> <p>Warranty – 12 months</p>	Local/Imported		
2	Creep	1	<p>For feeding of lambs/kids</p> <p>Dimension: 4*4 feet</p> <p>Walled by Galvanized iron pipe</p>	Local/Imported		

			Covered manger inside Equiped with feeding implements like Feeders (for hay, grain, fodder) and drinker			
3	Body measurement taps	3	Large ruminants (cattle, buffalo) measuring tap (1 No.) Tape should be thick, durable, vinyl coated fiberglass that accurately estimates the weight of cattle in pounds or kilograms. The total length of the body/weight measuring tape is 2.5 meters. The weight range for beef cattle is 268kg to 1080kg and for dairy cattle is 35kg to 1000kg. Small ruminants (sheep and goat) measuring tap (2 Nos.) Tape should be thick, durable, vinyl coated fiberglass that accurately estimates the weight of sheep and goat)	Local/Imported		
4	Hoof Trimmer (Large+ Small)	5	Hoof trimmer large and small For trimming hooves of cattle sheep, goat (farm animals) sharp hoof shears and a hoof knife Length: 20.5cm, Hand grip: 12.5cm, Mouth grip 2.5cm High quality galvanized iron	Local/Imported		
5	Fodder Cutter	1	Heavy duty toka machine with sharp blades with electric 2-3 Hp motor fitted, 5 Foot length stand material iron and metal used can cuts more than 1000 kg per hours Best for Buffalo, cows and Goat Farms,	Local		
Department/Section of Livestock Products Technology and Dairy Technology						
1	Gerber's Centrifuge	1	Multipurpose centrifuge for all types of butyrometers with digital LED display indicating the speed, time and temperature, Stainless steel housing, Programmable rotor speed from 600 to 1130 rpm, Programmable heater up to 68C, Programmable centrifugation time from 1 to 99 min, automatic interlocking safety lid, automatic shutdown in case of unbalance, automatic brake, Power supply:230V/50 ...60 Hz/1200 VA, Empty weight 26 kg, Total height with lid 460 mm, Warranty: 2 years Accessories: Head A: Centrifuge head (radius 260 mm) for a maximum of 36 butyrometers buckets and 18 Babcock buckets. butyrometers bucket and Babcock bucket, butyrometer stand. Head B: Centrifuge head (radius 190 mm) for a maximum of 8 Majonnier tubes, Majonnier tubes and stand. Head C: Centrifuge head (radius 190 mm) for a maximum of 6 buckets for solubility index tubes. Bucket for solubility index tubes, solubility index tubes. Water bath: Temperature range: up to 100°C, Connection value: 230 V/50 Hz, Capacity: 10-12 L, digital display of temp. Warranty: 2 years Butyrometers: Milk butyrometers (6 No): 0-10%, Cream butyrometers (6 No): 0-60%, Cheese butyrometers (6 No): 0-40%. Babcock	Imported		

			bottle for cream (6 No):0-20%, Babcock bottle for cheese (6 No):0-60%. Corks for butyrometer: 50			
2	Gerber's Tubes	1	Gerber tubes: Milk butyrometers (1 No): 0-10%, Cream butyrometers (1 No): 0-60%, Cheese butyrometers (1 No): 0-40%.	Imported		
3	Peeler	1	Body made of SS square pipes, Drum made of SS with abrasive material applied on its inner surface, Peeler material inside the walls should be Emery stone, Rotating disc at the bottom of the drum, Opening for removal of the product after peeling, Water spray arrangement from the top, Suitable drive mechanism to rotate the disc. Feed hopper & discharge hopper made in SS, Top lid, water and waste discharge pipe etc. Control Panel with timer for operation of the machine.	Local/imported		
4	Baking Oven	1	3 deck gas baking oven: Each deck should work separately with separate control, Forced air convection, Chamber capacity mini. 60 liters, Stainless steel interior, Housing: stainless steel, LED digital display, Power failure control system, Real time clock, Voltage : 220V/50Hz, Power: 400W, Temperature : 0-300°C, mini Tray size : 400×600×300 mm, mini Product size: 1800×890×1890 mm, Gas pressure : 2800. Warranty: 2 years Accessories: Dough making machine, proofer chamber, stainless steel moulds for bread, Slicer, cakes, muffins, biscuits and pizza trays etc.	Local/imported		
Department of Meat Technology						
1	Automatic scaler	1	Specifications: Function: An automatic machine that removes scales from fish Portable Material: Stainless steel/ Aluminum alloy Capacity: 30-50 fish at once Packing: The machine should be wrapped in plastic film first before packing to avoid moisture. Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.	China/ Pakistan		
2	Feather plucking machine	1	Specifications: Function: Removal of feathers of poultry birds Material: Stainless steel/ Galvanize steel Motor Power: 1500W-2200W Voltage: 110-220V ((In case of 110V, an additional transformer is needed) Weight: 40-60 kg Capacity: 3-8 Chickens Rotation Speed: 1400 r/Min Fingers: 90-185 rubber fingers Packing: The machine should be wrapped in plastic film first before packing to avoid moisture.	China/ Pakistan		

			Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.			
3	Meat Slicer	1	Specifications: Meat slicing machine and a freezer Function: Use to slice frozen meat Material: Stainless steel/ Aluminum alloy Power: 600-800W Voltage: 110-220V Cutting thickness: 0-18mm Blade diameter: 300-350mm Cutting Speed:30-50 piece / minute 1 Deep freezer Packing: The machine should be wrapped in plastic film first before packing to avoid moisture. Machines should be put in a strong iron case/wooden case, and lined with metal wire if necessary.	China/ Pakistan		
4	Butchering sets (knives etc.)	1	Specifications: 8 pieces butchering knife set Material: stainless steel blades 8-10 Piece Cutlery Roll Cut-resistant glove (level 5) 1 weighing scale with 50-70 kg capacity	China/ Pakistan		

Signature: _____

Designation: _____

Dated: _____

Stamp: _____