

BIHAR ANIMAL SCIENCES UNIVERSITY

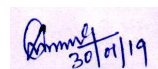
Bihar Veterinary College Campus, Patna - 800 014, Bihar

NOTICE INVITING TENDER (NIT)

TENDER NOTICE No.: – 02-6/CPC/BASU/2019

Dated: 30/01/2019

Sealed bids are invited through registered / speed post / courier services only from Reputed / Registered Supplier / Dealers / Firms / Company / Enterprises for the supply and installation of **“PROTEIN ANALYSER”** at different units of Bihar Animal Sciences University, Patna. Sealed envelope containing full information along with supporting documents must reach in the office of the undersigned on or before **21/02/2019 up to 5.00 P.M.** and the same will be opened on **22/02/2019 at 3.00 P.M.** Tenderer are requested to present at the time of opening of tender. No further notice will be given to attain the tender opening meeting. Details of Tender Notice are available on Websites: www.basu.org.in.

A handwritten signature in blue ink, followed by the date '30/01/19' written in blue ink.

Procurement Officer
Bihar Animal Sciences University, Patna

BIHAR ANIMAL SCIENCES UNIVERSITY

Bihar Veterinary College Campus, Patna - 800 014, Bihar

www.basu.org.in

NOTICE INVITING TENDER (NIT)

TENDER DOCUMENT

FOR SUPPLY AND INSTALLATION OF

“PROTEIN ANALYSER”

AT

BIHAR VETERINARY COLLEGE, PATNA

&

COLLEGE OF FISHERIES, KISANGANJ

Tender Notice No.: 02-6/CPC/BASU/2019

Dated: 30/ 01 /2019

Last Date, Time & Place of submitting the tender	21/02/2019 ; up to 5.00 PM Address to: Procurement Office, Administrative Building, Bihar Animal Sciences University (BASU), Bihar Veterinary College Campus, Patna- 800 014, Bihar, India.
Date, Time & Place of opening of tender	22/02/2019 ; 3.00 PM Conference Hall-2, Bihar Veterinary College, Patna- 800 014, Bihar, India.

BIHAR ANIMAL SCIENCES UNIVERSITY

Bihar Veterinary College Campus, Patna - 800 014, Bihar

www.basu.org.in

NOTICE INVITING TENDER (NIT)

TENDER NOTICE No.: – 02-6/CPC/BASU/2019

Dated: 30/01/2019

1. Bihar Animal Sciences University, Patna invites sealed open tenders in Two Bid System (Technical Bid and Financial Bid) from Reputed, Eligible and Qualified Firms/Manufacturer/Suppliers of following Goods.

S. No.	Brief Description of Goods	Place of supply & Installation	Quantity	Amount of Bid Security/ EMD in INR
1.	PROTEIN ANALYSER	Bihar Veterinary College, Patna	01	INR 1,75,000/-
		College of Fisheries, Kishanganj	01	
Total			02	

2. Schedule of Requirement: -

Sl. No.	Activity	Date/Time : Duration
1.	Download date of Tender documents	From 01/02/2019 (www.basu.org.in)
2.	Date/Time for submission of Bid	21/02/2019 Up to 5.00 PM Procurement Office, Administrative Building, Bihar Animal Sciences University (BASU), Bihar Veterinary College Campus, Patna- 800 014, Bihar, India.
3.	Pre Bid Meeting	12/02/2019 at 3.00 PM Conference Hall-2, Bihar Veterinary College, Patna- 800 014, Bihar, India.
5.	Date & time for opening of Technical Bid	22/02/2019 at 3.00 PM. Conference Hall-2, Bihar Veterinary College, Patna- 800 014, Bihar, India.
6.	Contact person for queries	Procurement Officer, Bihar Animal Sciences University, Patna
7.	Financial Bid Opening Tentative Date and Time	26/02/2019 at 3.00 PM (Tentative, it may vary) Conference Hall-2, Bihar Veterinary College, Patna- 800 014, Bihar, India.

Tender enquiry documents containing detailed specifications along with terms and condition can be downloaded from the Bihar Animal Sciences University website (<http://www.basu.org.in>).

1. EMD must be enclosed in the Technical Bid of the Tender in the form of Bank Guarantee (**Annexure- II**) or TDR (Term Deposit Receipt) or FDR (Fixed Deposit Receipt) from any Nationalised Bank in favour of **FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna**. No interest is payable on Bid Security. Tenders without EMD shall be summarily rejected.
2. In the event of any of the above mentioned dates being declared as a holiday/closed day for BASU, Patna, the tender will be received/opened on the next working day at the prescribed venue and time.
3. Tenderer are requested to present at the time of opening of tender.
4. This Tender Enquiry Document is not transferable.

Terms and Conditions:

1. The technical and financial bids should be quoted separately and put in different sealed envelopes marked “Technical bid” or “Financial bid” as applicable. Both these envelopes are to be put in an outer envelope which should also be sealed and marked appropriately as tender for supply of equipment (**Tender Notice No.: – 02-6/CPC/BASU/2019**).
2. The bidder must provide either the Original Equipment Manufacturer (OEM) or their Authorized Distributor Certificate on their letter head in prescribed format (**Annexure- I**) If the same is not provided with Technical Bid the tender will be summarily rejected.
3. The Vendors must have executed same nature of work in the last 2 years. The user list of such institutions, with name of equipment and the cost may also be supplied with the bids. Recent orders in government organization should also be enclosed.
4. The Technical and Financial Bids should be submitted in original. The Financial Bid should include the cost of main Equipment/items and its essential accessories at F.O.R delivery including of all taxes, charges for insurance and transportation of the goods, agency commission, installation & commissioning, training charges etc. if any.
5. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender. The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance.
6. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are cuttings, they should be duly signed, failing which the bids are liable to be rejected.
7. Any bids received after closing time shall not be considered. University shall not be responsible for any postal delay. The tender documents should be sent through courier, speed post or registered post only.

The postal address for submitting the tender is:

**Procurement Officer,
Administrative Building,
Bihar Animal Sciences University (BASU),
Bihar Veterinary College Campus, Patna- 800 014, Bihar, India.**

8. The bidders or their authorized representatives may also be present during the opening of the Technical Bid, if they desire so, at their own expenses. In case the date mentioned above is declared Government Holiday, the date shall automatically be shifted to next working day.

9. Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before issuing the purchase order.

10. **Earnest Money Deposit (EMD):** Bidder needs to submit the refundable EMD of **INR 1,75,000/-** (Rupees One lakh seventy-five thousand) only in the form of Bank Guarantee (**Annexure- II**) or TDR (Term Deposit Receipt) or FDR (Fixed Deposit Receipt) from any Nationalised Bank in favour of **FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna**. EMB must be enclosed in the envelope containing the Technical bid. Failure to submit the EMD will lead to the rejection of the tender.

11. While sending rates, the firm shall give an undertaking to the effect that “the terms /conditions mentioned in the Inquiry Letter/Tender Notice against which the rates are being given are acceptable to the firm”. In case the firms do not give this undertaking, their rates will not be considered.

12. All disputes shall be subject to Patna Jurisdiction only.

13. All tenders in which any of the prescribed conditions is not fulfilled or any condition is put forth by the tenderer shall be summarily rejected.

14. Bihar Animal Sciences University, Patna reserves the right to cancel the tender at any point of time without assigning any reason.

15. **Manual and Documents:** All manuals necessary for operating and servicing the equipment (including details of electronic circuits) will have to be provided along with the instrument.

16. Bidders should go through the tender terms, conditions and specifications carefully and fill in the attached compliance statement accurately and unambiguously. They should ensure that all the required documents are furnished along with the bid.

SPECIAL TERMS AND CONDITIONS FOR TENDERERS

The following terms and conditions should be complied with during submitting tender: -

1. Sealed Quotation/Tenders are invited in two bid systems.
2. Tenders should be submitted to the **Procurement Officer, BASU, Patna-800 014** under the sealed cover.
3. The tenderer should quote price/rate in figures as well as in words. The tender should be signed by the tenderer himself/themselves or their authorized agent on his/her/their behalf. In case the tender is signed by the agent the authority letter in favour shall be enclosed with tender documents.
4. The tenderers should take care that the rate and amount are written in such a way that interpolation is not possible. No blank space should be left, which would otherwise make the tender liable for rejection.
5. GST Registration Certificate self-attested copy should be enclosed.
6. Delivery schedule with definite date of delivery at destination taking into cognizance of transit facility must be indicated. This contractual delivery date/ period should be inclusive of all the lead time.
7. The tenderer submitting his tender would be deemed to be considered and accepted all the terms and conditions. No enquiries, verbal or written shall be entertained in respect of acceptance or rejection of the tender.
8. This institute reserves the right to cancel/ reject in or any part of the tender, which generally do not fulfil the condition stipulated in the tender without assigning any reason.
9. Any action on the part of tenderer to influence anybody of the institute will make his/ their tender liable for rejection.
10. The tenderers shall submit the offer in original copy of the tender documents duly signed on each page. Item wise rate indicating units can be offered on letter head of the firm, in case, space printed on financial form is not sufficient.
11. In case of placement of purchase order, the vendor (the tenderer whose tender is accepted) may comment on the purchase order within **10 days** from the date of dispatch of purchase order otherwise it will be deemed that offer is acceptable to the vendor. Notwithstanding any other provision, the terms and conditions and any other provision included, in the purchase order will be treated as binding with “Errors & Omissions Expected”. However, if the vendor notices of the order, he must bring the same into the

notice of tender/ quotation and seek clarifications within the above stipulated time. Vendor will have to bear the responsibility for failure to take this action.

12. The institute may in writing make any revision or change in the purchase order, including additions or deletions from the quantities originally ordered or in the specifications or drawing. If any such revisions/ changes affect the price or delivery, the same shall be subject to the adjustment of price/ delivery, wherever required on a reasonable basis by mutual agreement in writing which should be communicated.
13. The institute reserves the right to cancel the purchase order or any part thereof /shall be entitled to revise the contract wholly or in a part by written notice to the vendor if: -
 - (a) The vendor fails to comply with the terms and conditions of the purchase order including specifications and other technical requirement.
 - (b) The vendor becomes bankrupt or goes into liquidation.
 - (c) The vendor fails to deliver the goods in time and or does not replace the rejected goods promptly.
 - (d) A receiver is appointed for any of the property owned by the vendor.
14. Upon the receipt of the said cancellation notice, the institute shall discontinue all works of the purchase order and matters connected with it.
15. Supply order will be issued as per the requirement of the institute. The supplier will have to supply ordered materials within the delivery time mentioned in the supply order.
16. Unless otherwise specified in the order, the order price shall remain firm and will not be subject to escalation of any description during the dependency of the order, notwithstanding the change in the cost of material and components he/they may take clearance while the order is under execution even if the execution of the order for any reason whatsoever.
17. The institute may its option, reject such defective materials at the vendor's expense in which event the vendor shall, without any cost to the Institute and as promptly as possible, remove such materials and furnish and install proper and acceptable material.
18. In the event of delay delivery and/or unsatisfactory manufacturing progress and supply, the Institute has the right to cancel the purchase order as whole or in part without liability for cancellation charges.
19. Timely delivery as mentioned in purchase order shall be in the essence of the order and no variation shall be permitted except with prior authorization in writing from the Institute.

20. In the event of delay in making delivery on the part of the vendor, it will be at Institute discretion to receive delivery with a reduction in price of the article/or equipment.

21. Forced measure shall mean and be limited to the following: -

(a) Any war/hostilities

(b) Any riot or civil communication

(c) Any earthquake, flood, tempest, lightning or other natural physical disaster.

(d) Any strike or lock up (Only those exceeding ten continuous days' duration) affecting the performance of the vendor's obligation.

The seller shall advise the Institute by Registered Letter duly certified by local chamber of commerce of statutory authorities the beginning and end of the above caused of delay within 7 days of occurrence and cessation of such forced measure concern. In the event of delay lasting over one month, if arising due to our cause of force measure, the Institute reserves the right to cancel the order.

23. No payment shall be made for rejected materials nor would the tenderer be entitled to claim for such items.

24. Rejected materials would be removed by the tenderer from the site within two weeks or the date of rejection at their own cost. In case they are not removed they will be auctioned at the risk and responsibility of the suppliers without any further notice.

25. In case of not honouring the supply order, the Institute will have the right to impose penalty as deemed fit and to resort to make purchase at the suppliers cost and risk and his security deposit may be forfeited in favour of the Institute cost and risk.

26. Taxes & Levies-Rates inclusive of All Taxes. No extra payment will be made by the BASU, Patna in this regard.

27. Disputes, if any, arising between the Institute and the bidder out of or in connection with the terms and conditions contained herein shall be referred for arbitration to the Patna jurisdiction. Disputes shall be decided keeping in view of the terms and conditions of the tender and Bihar financial rules applicable to the Institute.

28. At present Bihar Animal Sciences University, Patna does not have DSIR Certificate. So, price should be quoted considering this point.

29. Minimum two years' warranty from the date of installation will be provided.

30. No Advance payment shall be made.

31. For delay in supply, BASU will charge liquidated damage @0.5% per week maximum 10% after which the order will be cancelled.

32. There will be performance security @ 5% of the order value for the entire period of warranty (**Annexure-III**).

TENDER FORM

To,
The Procurement Officer,
Bihar Animal Sciences University, Patna-14

Subject: Tender Notice No.:

Sir,

I have gone through the terms and conditions laid down in the tender documents and accept the same.

I am here by submitting the technical bid and enclosing the documents as per details given below:

CHECK LIST

1. EMD detail (Annexure-II)
2. This EMD is being enclosed (along with the technical bid).
3. List of procurement agencies of repute to whom the Tender item have been supplied during last twelve months with proof.
4. Authorized distributor certificate issued by original manufacturer of the equipment/item in format mention (Annexure- I).
5. Attested copies of GST registration.
6. Attested copies to PAN (Permanent Account Number).
7. Service Tax Registration Certificate if, applicable.
8. Audited balance sheet of the firm of the last three years.
9. Income Tax Return copy of the last three years.
10. Address Proof.
11. Experience certificate of the last three years.
12. Sales Tax Registration Certificate
13. Enclosure of detail technical specification and other required documents.
14. Tender Documents duly signed on all pages.
15. Certificate that firm possess its Service Centre in Patna.

Certified that each and every page of the tender documents are serially numbered and signed by me.

Yours faithfully,

Nature and Name of the authorized Signatory with seal

Designation

Name of the company (Tenderer)

TECHNICAL BID

1. (a) Name of the Tenderer:

(b) Status of the Tenderer:

(i) Manufacturer/Importer:

(ii) Proprietorship:

2. Partnership/Company

Full Postal Address

.....

.....

.....

3. Telephone No.:

4. Mobile No.:

5. Fax No.:

6. e-mail Address:.....

7. (a) Names of agencies with whom:the tenderer is registered.

(b) Names of procurement agencies to whom:

Items have been supplied during last 2 years:.....

8. Bank details of the bidder:.....

Name of Account Holder:.....

Name of Bank:.....

Bank Account No.:.....

IFSC & MICR Code:.....

Address of the Bank:.....

I am enclosing duly signed Technical specification of the items offered in response of this Bid.

Seal & Signature of Bidder

**Technical Compliance of the Bidder with reference to the ‘Specification of Equipments’
(Separate form to be used for each item offered)**

Name of the Bidder/Tenderer:

Tender No.:

Name and Model No. of offered goods/equipments:

Make:

Sl. No.	Technical specification From Bihar Animal Sciences University	Features available in equipments Yes or No	Any deviation from Specification, if any	Corresponding part number/ datasheet/ page no. in broacher in support of specification
1.	Digestion system with automatic lift system.			
2.	Heating places for tubes (Separate heating place for each tube of 250 ml capacity)- 20 minimum			
3.	Equipped with auto lift system			
4.	Temperature range :- Ambient to 440 ± 10 Degree C			
5.	Temperature stability repeatability at 400 Degree C: - ±1 Degree C			
6.	Heating time from 20 to 400 Degree C :- 40 ± 5 minutes			
7.	Digestion steps per application: - Minimum 10			
8.	Digestion application memory: - Minimum 9			
9.	Digital display to be present			
10.	Power supply :- 230 V / 50-60 Hz			
11.	Unit shall be made up of acid resistant material (Documentary evidence to be enclosed)			

12.	Efficient scrubber to remove acid vapor and pass it through water and alkali before venting			
13.	The offers with water based aspirator system would not be considered			
14.	Exhaust manifold system for handling digestion tubes (250 ml) tube rack, heat shields and retainer plate should be supplied along with the system			
15.	System comprising of auto sampler (of minimum 20 tubes), distillation unit, titration unit along with storage tanks to be housed in appropriate frame of wood or any suitable material			
16.	Automatic alkali addition			
17.	Automatic water addition			
18.	Automatic H3BO3 addition			
19.	Automatic check of chemical reservoir			
20.	Automatic suction of sample waste			
21.	Removable drip tray for cleaning			
22.	Splash head to be made of alkali resistant material			
23.	Delivery system to be highly accurate and preferably of volume based displacement pumps for reagent addition			
24.	Variable output steam generator preferably of glass			
25.	Automatic safety door for protection against splashes			
26.	Removable safety door for			

	cleaning			
27.	Tube-in place safety shall be available to avoid initiation of distillation when tubes are not fitted properly			
28.	Over pressure sensor for steam generator			
29.	Titration system :- Preferably to be colorimetric based. Other mode of titration system may be considered, if recommended or outlined by ISO/AOAC/BIS methods for protein estimation in feed, food and milk products (Documentary evidence to be submitted)			
30.	Recovery rate (for nitrogen levels between 1-200 mg N):- > 99.5 %			
31.	Method storage (minimum) :- 8			
32.	Storage tank with level sensor for chemicals (10 ± 1 lit) :- 1 for NaOH and 1 for H3BO3)			
33.	Storage tank with level sensor for waste and water (20 ± 1 ltrs) :- 1 for waste and 1 for water			
34.	Storage tank with level sensor for titrant (5 ± 1 lit) :- 1 for titrant			
35.	Auto sampler system to keep the digestion tubes, each of 250 ml :- Min 20 tubes			
36.	Computer software for data management and operation			
37.	Result calculation and built in recovery tests evaluation			
38.	Connections - Interface for connecting with computer,			

	balance and printer			
39.	Branded desktop computer with flat screen (20-24 inch) :- with minimum 4 GB RAM and 1 TB Hard Disc to meet equipment requirement, Wi-Fi connectivity. The offered computer unit shall meet the requirement of 3.2 for networking			
40.	Laser printer - Suitable for back to back printing and approx.. 50 pages / day. Power supply:- 230 V / 50-60 Hz			
41.	1000 VA UPS for PC			
42.	Protein digestion tubes :- 60 tubes (250 ml)			
43.	Tube insert rack :- 3 No's (20 place for 250 ml tubes)			
44.	Consumables required for the period of 1 year must be offered with the equipment			
45.	Chiller suitable for providing continuous cooling water throughout the operation			
46.	AMC charges for next 2 years may be quoted after completion of warranty period			
47.	May ask for demonstration before final approval of equipment			
48.	Onsite Warranty: minimum Two year from date of Installation			

Seal & Signature of Bidder

Price Schedule form: Price Schedule for Goods Being Offered from India/abroad in INR
(Separate form to be used for each item offered)

Name of the Bidder/Tenderer:

Name & Model No. of offered goods:

Tender No.:

Make:

Annexure- I

MANUFACTURER'S AUTHORISATION FORM

To,

**Finance Comptroller,
Bihar Animal Sciences University,
Patna-800014**

Dear Sir,

Ref. Your Tender Inquiry No....., dated.....

We,who are proven and reputable manufacturers of.....(*Name of equipment offered in the tender*) hereby authorise Messrs.....(*name and address of the supplier*) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender inquiry for the above.....
(*Name of equipment offered in the tender*) manufactured by us.

We further confirm that no supplier or firm or individual other than Messrs. (*name and address of the above agent*) is authorised to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender inquiry for the above(*Name of equipment offered in the tender*) manufactured by us.

We also hereby confirm that we would be responsible for the satisfactory execution of contract placed on the authorised agent.

We also confirm that the price quoted by our agent shall not exceed than that which we would have quoted directly.

Note:-

- (i) This letter of authorisation should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.
- (ii) Original letter may be sent.

Annexure-II

BANK GUARANTEE FORM FOR EMD

To,

**Finance Comptroller,
Bihar Animal Sciences University,
Patna-800014**

Whereas(hereinafter called the “Tenderer”) has submitted its quotation dated..... for the supply of (hereinafter called the “Tender”) against the Purchaser’s Tender Enquiry No.Know all persons by these presents that we.....of..... (Hereinafter called the “Bank”) having our registered office at are bound unto (hereinafter called the “Purchaser) in the sum offor which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank thisday of..... 20..... The conditions of this obligation are:

- If the Bidder withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- If the Bidder having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-
 - a. fails or refuses to furnish the performance security for the due performance of the contract.
or
 - b. fails or refuses to accept/execute the contract.
or
 - c. if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition(s).

This guarantee will remain in force for a period of forty-five days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

Signature of the authorized Office of the Bank _____

Name and designation of the Officer _____

Seal, Name & Address of the Bank and Address of the Branch _____

Annexure-III

MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY

To,
Finance Comptroller,
Bihar Animal Sciences University,
Bihar Veterinary College Campus, Patna-14

WHEREAS (name and address of the supplier) (hereinafter called “the supplier”) has undertaken, in pursuance of contract no..... dated to supply (description of goods and services) (herein after called “the contract”).

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of **Rs.-----/-** (-----), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed thereunder or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the day of, 2019.

.....
(Signature of the authorized officer of the Bank)

.....
Name and designation of the officer

.....
.....
Seal, name & address of the Bank and address of the Branch

SPECIFICATIONS OF PROTEIN ANALYSER (n=02)

Automatic type Protein Analyser Machine for estimation of Nitrogen content of feed, fodder, biological samples, etc.

1. Digestion system with automatic lift system.

- Digestion system with automatic lift system.
- Heating places for tubes (Separate heating place for each tube of 250 ml capacity)- 20 minimum.
- Equipped with auto lift system.
- Temperature range :- Ambient to 440 ± 10 Degree C.
- Temperature stability repeatability at 400 Degree C: - ± 1 Degree C.
- Heating time from 20 to 400 Degree C :- 40 ± 5 minutes.
- Digestion steps per application: - Minimum 10.
- Digestion application memory: - Minimum 9.
- Digital display to be present.
- Power supply :- 230 V / 50-60 Hz.
- Unit shall be made up of acid resistant material (Documentary evidence to be enclosed).
- Efficient scrubber to remove acid vapor and pass it through water and alkali before venting.
- The offers with water based aspirator system would not be considered.
- Exhaust manifold system for handling digestion tubes (250 ml) tube rack, heat shields and retainer plate should be supplied along with the system.

2. Automatic distillation, titration and auto sampler unit

- System comprising of auto sampler (of minimum 20 tubes), distillation unit, titration unit along with storage tanks to be housed in appropriate frame of wood or any suitable material.
- Automatic alkali addition.
- Automatic water addition
- Automatic H_3BO_3 addition.
- Automatic check of chemical reservoir.
- Automatic suction of sample waste.
- Removable drip tray for cleaning.
- Splash head to be made of alkali resistant material.
- Delivery system to be highly accurate and preferably of volume based displacement pumps for reagent addition.
- Variable output steam generator preferably of glass.
- Automatic safety door for protection against splashes.
- Removable safety door for cleaning.
- Tube-in place safety shall be available to avoid initiation of distillation when tubes are not fitted properly.
- Over pressure sensor for steam generator.

- Titration system :- Preferably to be colorimetric based. Other mode of titration system may be considered, if recommended or outlined by ISO/AOAC/BIS methods for protein estimation in feed, food and milk products (Documentary evidence to be submitted).
- Recovery rate (for nitrogen levels between 1-200 mg N):- > 99.5 %
- Method storage (minimum) :- 8.
- Storage tank with level sensor for chemicals (10 ± 1 lit) :- 1 for NaOH and 1 for H3BO3)
- Storage tank with level sensor for waste and water (20 ± 1 ltrs) :- 1 for waste and 1 for water.
- Storage tank with level sensor for titrant (5 ± 1 lit) :- 1 for titrant.
- Auto sampler system to keep the digestion tubes, each of 250 ml :- Min 20 tubes.
- Computer software for data management and operation.
- Result calculation and built in recovery tests evaluation.
- Connections - Interface for connecting with computer, balance and printer.
 - a) Branded desktop computer with flat screen (20-24 inch) :- with minimum 4 GB RAM and 1 TB Hard Disc to meet equipment requirement, Wi-Fi connectivity. The offered computer unit shall meet the requirement of 3.2 for networking.
 - b) Laser printer - Suitable for back to back printing and approx.. 50 pages / day.
- Power supply:- 230 V / 50-60 Hz.
- 1000 VA UPS for PC
- Protein digestion tubes :- 60 tubes (250 ml).
- Tube insert rack :- 3 No's (20 place for 250 ml tubes).
- Consumables required for the period of 1 year must be offered with the equipment
- Chiller suitable for providing continuous cooling water throughout the operation
- AMC charges for next 2 years may be quoted after completion of warranty period.
- May ask for demonstration before final approval of equipment
- Onsite Warranty: minimum Two year from date of Installation.