



# **BIHAR ANIMAL SCIENCES UNIVERSITY**

**Bihar Veterinary College Campus, Patna - 800 014, Bihar**

**<https://basu.org.in>**

**TENDER DOCUMENT  
FOR  
SUPPLY AND INSTALLATION  
OF  
VARIOUS LABORATORY EQUIPMENTS/INSTRUMENTS  
THROUGH  
E-PROCUREMENT MODE  
FOR  
THE COLLEGE OF FISHERIES, KISHANGANJ**

**Tender No.: 08/CPO/BASU/2022-23**

**Dated: 10/01/2023**

# INDEX

<b>Sr. No.</b>	<b>Description</b>	<b>Page No.</b>
<b>1.</b>	Chapter No. 1 – Notice Inviting Tender	<b>3-4</b>
<b>2.</b>	Chapter No. 2 – General Terms & Conditions	<b>5-6</b>
<b>3.</b>	Chapter No. 3 – Special Terms & Conditions for Tenderers	<b>7-9</b>
<b>4.</b>	Chapter No. 4 – Tender Form / Check List	<b>10</b>
<b>5.</b>	Chapter No. 5 – Technical Bids Format	<b>11-12</b>
<b>6.</b>	Chapter No. 6 – Technical Compliance of the Bidder	<b>13-20</b>
<b>7.</b>	Chapter No. 7 – Price Schedule Form/ Price Bid	<b>21-22</b>
<b>8.</b>	Chapter No. 8 – Manufacturers Authorization Form	<b>23</b>
<b>9.</b>	Chapter No. 9 – Performance Bank Guarantee Form	<b>24</b>
<b>10.</b>	Chapter No. 10 – Self-Declaration – No Blacklisting	<b>25</b>
<b>11.</b>	Chapter No. 11 – Authorization Letter for Attending Tender Opening	<b>26</b>
<b>12.</b>	Chapter No. 12 – Previous Supply Orders Format	<b>27</b>
<b>13.</b>	Chapter No. 13 – Technical Specifications of equipments/items	<b>28-35</b>

**NOTICE INVITING e-TENDER (NIT)**

**NIT No.: – 08/CPO/BASU/2022-23**

**Dated: 10/01/2023**

**Sub.:** Notice Inviting e-Tender (E-Procurement mode only) for the supply and installation of various laboratory equipments/instruments for the College of Fisheries, Kishanganj under PMMSY project.

1. Bihar Animal Sciences University, Patna invites online tenders (<https://eproc2.bihar.gov.in>) in Two Bid System (Technical Bid and Financial Bid) from Reputed, Eligible and Qualified Firms/Manufacturer/Suppliers of the following laboratory equipments/instruments for the College of Fisheries, Kishanganj under PMMSY projects.

Gr. No.	Brief Description of equipments/instruments	Place of supply & Installation	Quantity	Amount of Bid Security/ EMD in INR
01	Atomic Absorbance Spectrophotometer (AAS)	College of Fisheries, Kishanganj	01	1,00,000.00
02	High Performance Liquid Chromatography (HPLC)	-Do-	01	1,20,000.00
03	Gas Chromatography-Mass Spectrophotometry (GC-MS)	-Do-	01	1,80,000.00
<b>Total</b>			<b>03</b>	

2. Tender Schedule: -

Sl. No.	Activity	Date and Time
1.	Date and time for downloading of bid document	From <b>16/01/2023</b> to <b>08/02/2023</b> (17:00 Hrs.) ( <a href="https://eproc2.bihar.gov.in">https://eproc2.bihar.gov.in</a> )
2.	Date of Pre- Bid Meeting	<b>23/01/2023 at 14.30 Hrs.</b> , Conference Hall-2, BVC, Patna
3.	Last date and time of submission of online bids	<b>09/02/2023 upto 17.00 Hrs.</b> ( <a href="https://eproc2.bihar.gov.in">https://eproc2.bihar.gov.in</a> )
4.	Last date and time for submission of EMD in Hard copy (Original) and technical bid documents (Hard copy).	<b>10/02/2023 upto 14.00 Hrs.</b> (Central Purchase Office, Administrative Building, Bihar Animal Sciences University, Patna-800 014)
5.	Date, Time and Place of opening of Technical Bid	<b>13/02/2023 at 15.00 Hrs.</b> on the website of <a href="https://eproc2.bihar.gov.in">https://eproc2.bihar.gov.in</a> in the Central Purchase Office
6.	Contact person for any queries	Central Purchase Officer, Bihar Animal Sciences University, Patna
7.	Date and time of opening of Financial Bids	To be announced later on <a href="https://eproc2.bihar.gov.in">https://eproc2.bihar.gov.in</a>

3. To participate in E-Tendering the tenderer will have to be registered with E-Tendering service provider. For this, help desk – m-junction services limited RJ complex, 2nd Floor, Canara Bank, Campus, khajpura, Ashiana road, P.S –Shastri Nagar, Patna-800014, Toll Free No.- 18005726571, Email-ID: eproc2support@bihar.gov.in can be approached.
4. Tender enquiry documents containing detailed specifications along with terms and condition can be downloaded from the e-Procurement Portal <https://eproc2.bihar.gov.in>.
5. The required amount of Earnest Money (EMD) must be enclosed with the hard copy of Technical Bid of the Tender in the form of Bank Guarantee/ **Demand Draft** from any nationalized and schedule bank in favour of “**FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna**” (Only Offline mode). No interest is payable on Bid Security. **Tenders without EMD shall be summarily rejected.**
6. The Tender Inviting Authority reserves the right to extend the schedule of tender or to reject the tender without assigning any reason.
7. All communication, addendum/corrigendum related to this tender will be issued on the website of <http://eproc2bihar.gov.in> and <https://www.basu.org.in>
8. In the event of any of the above-mentioned dates being declared as a holiday/closed day for BASU, Patna, the tender will be opened on the next working day at the prescribed venue and time.
9. Tenderers need not to be present at the time of opening of tender as all procedures will be done in online mode <https://eproc2.bihar.gov.in>.
10. This Tender Enquiry Document is not transferable.

**GENERAL TERMS AND CONDITIONS**

1. The technical and financial bids should be submitted through online mode as mentioned in respective stage “Technical bid” / “Financial bid” as applicable.
2. **Each instrument has to be tendered separately.**
3. The bidder must provide either the **Original Equipment/item 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.**
4. The vendors must have executed same nature of work in the **last 2 years**. The user list of such institutions, with name of item and the cost may also be supplied with the bids. Recent orders in government organization should also be enclosed.
5. The Financial Bid should include the cost of main Equipment/items and its essential accessories at F.O.R delivery including of all taxes, GST, charges for insurance and transportation of the goods, agency commission, installation & commissioning, training charges etc., if any.
6. 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.
7. Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose. Date and time of opening of price bids will be decided after technical bids have been evaluated by the committee. Information in this regard will be placed on the website or e-mail. No separate information will be sent to the firms. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before issuing the purchase order.
8. **NSIC units only are exempted for submitting EMD as per BFR guideline.**
9. **Earnest Money Deposit (EMD):** Bidder needs to submit the refundable EMD as mentioned against the individual equipments/instruments form of Bank Guarantee/ Demand Draft from any nationalized and schedule bank in favour of “**FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna**” (Only Offline mode). However, scan copy of EMD document should be uploaded on e-procurement portal. **Failure to submit the EMD on due date will lead to the rejection of the tender.**
10. No interest shall be payable by the buyer to the bidder on EMD.
11. **While sending rates, the firm shall give an undertaking to the effect that “the terms /conditions mentioned in the 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. **The offer submitted by Telegram/E-mail/Speed post shall not be considered. No correspondence will be entertained in this matter.**
16. **Duly signed hard printed copy of all tender documents (submitted on e-procurement portal) should be submitted by the tenderer to Central Purchase Office, Administrative Building, Bihar Animal Sciences University, Patna-800 014 latest by 10/02/2023 upto 14.00 Hrs.**
17. **Bidders must submit duly stamped envelope (for registered/speed post) with complete postal address for the refund of EMD.**
18. **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.**
19. **Signing of Tender documents:** A person signing the tender form or any document forming part of the tender on behalf of another person should have an authority to bind such other person and if, on enquiry it appears that the person so signing had no authority to do so, Bihar Animal Sciences University, Patna may without prejudice, cancel the contract and hold the signatory liable for all costs, consequences and damages under the civil and criminal remedies available.
20. The tenderer should sign and affix his firm's stamp at each page of the tender and all its annexure as the acceptance of the offer made by tenderer will be deemed as a contract and no separate formal contract will be drawn. **No page should be removed/ detached from this Notice Inviting Tender.**

### **SPECIAL TERMS AND CONDITIONS FOR TENDERERS**

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

1. Online <https://eproc2.bihar.gov.in> tender invited in **two bid systems**.
2. Tenders should be submitted to the e-Procurement Portal <https://eproc2.bihar.gov.in> only.
3. 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.
4. 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.
5. Bihar Animal Sciences University, Patna reserves the right to cancel/ reject in or any part of the tender, which generally do not fulfil the conditions stipulated in the tender without assigning any reason.
6. Any action on the part of tenderer to influence anybody of the university shall make his/ their tender liable for rejection.
7. 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 seems that offer is acceptable to the vendor.
8. Bihar Animal Sciences University, Patna 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.
9. 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.
10. Upon the receipt of the said cancellation notice, the University shall discontinue all works of the purchase order and matters connected with it.
11. Supply order will be issued as per the requirement of the University. The supplier will have to supply ordered materials within the delivery time mentioned in the supply order.

12. 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.
13. The University may reject defective materials at the vendor's expense, without any cost to the Institute and as promptly as possible, remove such materials and furnish and install proper and acceptable material by the vendor.
14. 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.
15. 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 University.
16. In the event of delay in making delivery on the part of the vendor, it will be at University discretion to receive delivery with a reduction in price of the article/or equipment.
17. 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 University 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.

18. No payment shall be made for rejected materials nor the tenderer be entitled to claim for such items.
19. Rejected materials would be removed by the tenderer from the site within two weeks from the date of rejection at their own cost. In case, if not removed on time then University will not take any responsibility of security of items and it may be auctioned without any further notice.
20. In case of not honouring the supply order, the University 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 University cost and risk.
21. Taxes & Levies - **rates are inclusive of all taxes, duties and GST**. No extra payment will be made by the University in this regard.
22. Disputes, if any, arising between the University 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.

23. **Bihar Animal Sciences University, Patna have DSIR Certificate (Reg. No.: TU/V/RG-CDE (1293)/ 2020 Dated: 07.01.2021). So, price should be quoted considering this point and DSIR certificate may be made available on demand at the time of issue of supply order.**
24. **Minimum three-years onsite comprehensive warranty from the date of installation shall be provided.**
25. No Advance payment shall be made.
26. For delay in supply, BASU will charge liquidated damage @0.5% per week maximum 10% after which the order will be cancelled.
27. **Performance Guarantee: The vendor shall furnish unconditional Performance Bank Guarantee (PBG) @ 7.5% of the order value for the entire period of warranty (additional two months) i.e. 38 months in the form of Bank Guarantee (Annexure-II)/ Fixed Deposit Receipt (FDR)/ Term Deposit Receipt (TDR) in favour of “Finance Comptroller, Bihar Animal Sciences University, Patna”, and should be submitted within 15 days of receipt of supply order.**
28. **Validity of the bid shall be 90 days from the date of opening of tender.**
29. **The bidder/tenderer should give a certificate to the effect that the quoted prices are the minimum and they have not quoted the same item on lesser rates than those being offered to University to any other customer nor they will do so till the validity of offer or execution of the purchase order, whichever is later.**

**TENDER FORM**

To,

The Vice-Chancellor,  
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 hereby submitting the bid and enclosing the documents as per details given below:

**CHECK LIST**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Remarks</b>
1.	Original EMD attached	Yes/ No
2.	Attested copies of GST registration	Yes/ No
3.	Attested copies to PAN (Permanent Account Number)	Yes/ No
4.	Technical bid in the prescribed format uploaded	Yes/ No
5.	Financial bid in the prescribed format uploaded	Yes/ No
6.	Valid Authorization Letter from the manufacturer on their Letter Head (Annexure-I)	Yes/ No
7.	Audited balance sheet of the firm of the last three years issued from registered chartered accountant firm	Yes/ No
8.	Income Tax Return copy of the last three years	Yes/ No
9.	Address Proof	Yes/ No
10.	Details of at least three reputed Organizations where the tenderer executed/running the concern equipment with proof	Yes/ No
11.	Experience of last three years supply order/work order proof	Yes/ No
12.	Self-Declaration –No Blacklisting	Yes/ No
13.	Certificate that firm possesses its Service Centre in Bihar / Pan India	Yes/ No
14.	All pages of the tender document are to be serially number, signed and stamped by the vendor	Yes/ No

Yours faithfully,

Name and Signature of the authorized person of  
the firm/tenderer along with seal

Place:

Date:

**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 BID SHEET

Bihar Animal Sciences University

		Tender No.	:							
		Group No.	:							
		Quantity	:							
		Name of Equipment/Items	:							
Sl No.	Details			To be Filled in color cells by Bidders						
1	Name of the Bidder									
2	Address of the Bidder									
3	Constitution of the firm/ agency (Attached copy)									
4	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">Bid Processing Fee</td> <td style="width: 65%;">(A) As prescribed in Tender document, (Non-Refundable) and to be paid only through - Payment modes i.e. Internet Payment Gateway (Master or Visa Card) Internet Banking/NEFT or RTGS</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td>Bid Processing Fee Amount - Rs. 1,00,00</td> <td></td> </tr> </table>	Bid Processing Fee	(A) As prescribed in Tender document, (Non-Refundable) and to be paid only through - Payment modes i.e. Internet Payment Gateway (Master or Visa Card) Internet Banking/NEFT or RTGS			Bid Processing Fee Amount - Rs. 1,00,00				
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5	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">Earnest Money</td> <td style="width: 65%;">(A) As prescribed in Tender document, duly pledged in Favour of FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td>Bid Security Amount - Rs.</td> <td>Bid Security Amount - Rs.</td> </tr> </table>	Earnest Money	(A) As prescribed in Tender document, duly pledged in Favour of FINANCE COMPTROLLER, Bihar Animal Sciences University, Patna			Bid Security Amount - Rs.	Bid Security Amount - Rs.			
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	Bid Security Amount - Rs.	Bid Security Amount - Rs.								
<b>A. QUALIFYING CRITERIA</b>										
6	Attested scan copies of GST registration									
7	Attested scan copies to PAN									
8	Scan copy of valid Authorisation Letter from the manufacturer on their letter head (Annexure-D)									
9	Scanned copy of Audited balance sheet of the firm of the last three years issued from registered chartered accountant firm									
10	Scanned copy of Income Tax Returns copy of the last three years									
11	Scanned copy of Address Proof									
12	Scan copy of details of at least three reputed Organisations where the tenders executed/supplied the concern equipment with proof									
13	Scanned copy of Experience of last three years supply order/work order proof									
14	Scan copy of self declaration -No Blacklisting									
15	Scanned copy of Certificate that firm possess its Service Centre in Bihar / Pan India									
Central Purchase Officer Bihar Animal Sciences University, Patna										

**Technical Compliance of the Bidder with reference to the ‘Specification of Equipment’s’/items  
(Separate form to be used for each items/equipments offered)**

**Name of the Bidder/Tenderer:**

**Tender No.:**

**Name and Model No. of offered goods/equipment/items:**

**Make:**

Gr. No.	Technical specification from Bihar Animal Sciences University	Features available in equipment’s/items Yes or No	Any deviation from Specification, if any	Corresponding part number/ datasheet/ page no. in brocher in support of specification
<b>1. Atomic Absorbance Spectrophotometer (AAS)</b>				
01.	<p>1. General:</p> <ul style="list-style-type: none"> <li>• Optical Double-Beam system with Facility of automated changeover from Flame to future Graphite Furnace upgradation</li> <li>• Future Ready Graphite furnace upgradation.</li> </ul> <p>2. Optics:</p> <ul style="list-style-type: none"> <li>• Wavelength range: 150 to 900 nm</li> <li>• Variable band width: 0.2 to 1.0 nm spectral bandwidths</li> <li>• Monochromator: Monochromator and prism or Grating with 1800 lines/mm blazed at 240nm</li> <li>• No. of lamps mount: Minimum 6</li> <li>• Background Correction: High intensity D2 for flame as well as Zeeman with Graphite Furnace back ground correction</li> <li>• Burner height: Automatic optimization of burner height</li> <li>• Fuel Flow: Automatic optimization of fuel flow</li> <li>• Detector: PMT [Photomultiplier tube] OR Solid State Detector (CMOS)</li> </ul> <p>3. Other Features:</p> <ul style="list-style-type: none"> <li>• Suitable air compressor should be there Graphite</li> </ul>			

	<p>Furnace Atomization</p> <ul style="list-style-type: none"> <li>• Integrated Zeeman background correction.</li> <li>• Monochromator: Echelle type</li> <li>• Suitable Air Compressor to be supplied of Internationally Reputed Brand</li> <li>• Suitable Branded Desktop Computer with original software loaded. AAS software for automatic analysis, parameter setting, concentration computation, baseline correction, report generation. QA/AC data logging, etc</li> <li>• Online UPS having minimum one-hour backup</li> <li>• Warranty: Minimum three years onsite comprehensive warranty.</li> <li>• Should have CE/USA/European Standard</li> </ul>			
<b>2. High Performance Liquid Chromatography (HPLC)</b>				
02.	<p>1. PUMP:</p> <ul style="list-style-type: none"> <li>• Quaternary Gradient Pump (4 solvents) with inbuilt degasser minimum four channel.</li> <li>• Flow rate of 0.01 -10 ml/min</li> <li>• System back pressure of minimum 10,000 to 12,000 psi for the entire flow rate range.</li> <li>• Flow rate accuracy of <math>\pm 1.0\%</math> or better</li> <li>• Flow precision of <math>&lt;0.05\%</math> RSD or <math>\pm 0.020</math> min SD, whichever is greater</li> <li>• Solvent rack and solvent bottles (at least four) also to be quoted</li> <li>• System should have the gradient delay volume variable option low to high with multiple mixer for minimum band spreading, higher theoretical plates, higher resolution.</li> </ul> <p>2. Manual Injector Manual Sample Injection System:</p> <ul style="list-style-type: none"> <li>• Manual Injection valve with 20<math>\mu</math>l, 500<math>\mu</math>l, 2ml sample loop syringe with accessories to fit the pump</li> </ul> <p>3. Auto Sampler:</p> <ul style="list-style-type: none"> <li>• The Auto sampler should operate at pressures in the range 10,000 to 12,000 psi</li> <li>• The linearity of the auto sampler must be <math>r &gt; 0.99999</math> (caffeine in water).</li> </ul>			

- The auto sampler must offer automated barcode recognition of the type of sample rack or Well plate and detection of empty sample segments.
- The complete eluent flow path must be compatible with eluent conditions (pH 2-12, max. 1 mol/L chloride concentration, no buffer)
- The injection principle of the auto sampler must be in-line split-loop (also called flow through needle) for high reproducibility injections with no sample loss.
- The auto sampler must support a sample capacity minimum 200 vials. Position.
- The injection range of the auto sampler is 0.01–100µL
- The injection volume precision of the auto sampler < 0.25% RSD (Caffeine in water), typically < 0.5% area RSD for 0.5 µL (caffeine in water).
- Sample temperature 4–40 °C with Temperature stability of ±1 °C

4. Detector:

Photo Diode Array Detector:

- With D2 lamp for UV range and tungsten lamp for Visible range or any other suitable source wavelength range of :190-800 nm or higher with 10mm path length flow cell.
- Lamp house temperature control facility should be available for better sensitivity & accuracy.
- Lamp Optimization facility should be available with the detector.
- Wavelength Accuracy ±1.0 nm, self-calibration with D-alpha line, verification with holmium oxide filter.

5. Columns:

Suitable C185UM250X4.6MM HPLC COLUMN

6. Software:

- The software should be an original licensed copy software with clear part number mentioned in the offer along with latest version computer/laser printer with original operating software should be quoted.

7. Computer & Printer:

- Display size: 23.8-inch Full HD with Anti-Glare

	<p>Display, Processor: 10th Gen Intel Core i5, Processor speed: 2.1 GHz OS: Pre-Loaded Windows 10 (Genuine), Pre-Installed: MS Office Home, RAM size: 8 GB, ROM: 1TB HDD Ports: 2 USB 3.1 Gen2, 2 USB 2.0</p> <p>8. Other requirements:</p> <ul style="list-style-type: none"> <li>• The published specification should be validated by online literatures by the bidders</li> <li>• The specification is the minimum and higher model will be given references</li> <li>• Online UPS having minimum one-hour backup</li> <li>• Warranty: Minimum three years onsite comprehensive warranty from date of installation</li> <li>• CE/USA/European Standard</li> </ul>			
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**3. Gas Chromatography Mass Spectrophotometry (GC-MS)**

<p>03.</p>	<p>1. System:</p> <ul style="list-style-type: none"> <li>• Gas Chromatography-Mass Spectrometer (GC-MS) with original licensed windows-based software and two capillary Injectors. Easily swappable interchangeable injector/detector position as per the requirement in the future.</li> <li>• All gases flow should be adjustable/ controlled by software with no manual control.</li> <li>• Auto shut down of instrument in case of leak detection in carrier gas.</li> </ul> <p>2. GC Oven:</p> <ul style="list-style-type: none"> <li>• Temperature Programming Ramps/Platue: &gt;24</li> <li>• Should have an operating range of ambient to 450°C.</li> <li>• Maximum Heating Rate: 120°C/min; Maximum Number of Ramps to facilitate better analysis of environmental pollutant.</li> <li>• EPC Pressure Range: 0-140psi or better</li> <li>• Retention time repeatability: &lt;0.0008 min Overheat protection.</li> <li>• Typical peak area repeatability: &lt;0.3 % RSD</li> <li>• Provision to install two or more columns, Retention time lock facility preferable.</li> <li>• Ambient rejection: &lt; 0.01 °C per 1 °C</li> </ul>			
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- |  |  |  |  |
|--|--|--|--|
| <p>3. Pneumatics:</p> <ul style="list-style-type: none"> <li>• System should have pneumatic Electronic Flow Control for all injectors &amp; detectors.</li> </ul> <p>4. Injectors - Split / Split less injector: Qty-1</p> <ul style="list-style-type: none"> <li>• Split / Split less injector for capillary Columns with Septum Purge functions</li> <li>• Must be suitable for all capillary columns, 50 um to 530 um id</li> <li>• Split ratio range: 10000:1 or better, must be available to avoid column overload</li> <li>• Maximum operating temperature up to 400°C</li> <li>• Efficient carrier gas saver function to change from Helium to Nitrogen flow gas in future.</li> <li>• Must have electronic septum purge flow control to eliminate carry-over</li> <li>• Should have upgradation facility of Isolation mode to allow column change without breaking the vacuum.</li> </ul> <p>5. Injector- PTV: Qty-1</p> <ul style="list-style-type: none"> <li>• Large Volume injection.</li> <li>• On Column injection</li> <li>• Temperature programming of up to 3 ramps at up to 860 °C/min</li> </ul> <p>6. Mass Spectrometer:</p> <ul style="list-style-type: none"> <li>• MS system should be offered with air-cooled &gt;290 Litre single vacuum output turbo molecular pump, EI ion source and with the following specifications:</li> <li>• Should have dual filaments in all ionization modes. Source with Programmable heating at 350 °C.</li> <li>• It should have accurate regulation of emission current up to 350 µA or more with improved regulation at low current.</li> <li>• It should have Integrated, dual filament assembly mounted with the same geometry with improved filament lifetime and effective regulation of emission current across the available emission current range.</li> <li>• It should have constant calibration gas pressure for optimum system tuning.</li> </ul> |  |  |  |
|--|--|--|--|

- The GC transfer line temperature should be programmable up to 400 °C.
- The system should have suitable technology to prevent neutrals to gain entry into the main analytical quadrupole.
- Mass Stability: 0.1 u/48 hours
- Mass Range: 2 –1000 u
- Sensitivity: EI scan sensitivity 2000:1, by 1 micro liter injection of 1pg/ul OFN standard scanning from 50 to 300 amu at nominal 272.
- EI SIM Instrument detection limit should be 5fg.
- Detector: 10KV conversion dynode detector with Overdrive lens
- Turbo Molecular Pump: turbo molecular pump with capacity of 250L/sec

7. Ion Source:

- Should have provision for Selected Ion Monitoring Scan while simultaneously acquiring data in the Full Scan Mode.
- Should be Free from any form wired connection, easy to clean, easy to maintain off-axis ion source, with suitable facility to carry out helium ion burn in source before the main analytical quadrupole.

8. Field upgradation:

- System should be Field upgradeable with the following Features
- Analysis of High boiling components directly into the MS bypassing the GC by injecting directly to MS.
- Upgradation with high sensitive source to achieve an IDL <1fg for highly sensitive application.

9. Library: Latest NIST-2020 library with license

10. Columns: (Qty: 2 numbers)

- DB5MS/HP5MS/EB5MS or equivalent column with dimension – 30m x 0.25 mm x 0.25µm.

11. Flame ionization Detector: Qty 1

- Should be compatible with Capillary column and packed column
- Flameout detection and automatic re-ignition
- Minimum Detectable Level (MDL): <1.5 pg C/s or

better

- Linear dynamic range:  $>10^7$

12. Head Space Sampler:

- Typical area repeatability  $<0.8\%$  RSD or better
- 12 Vials upgradable to 120-vial capacity with vial loader and 3 removable 40-vial racks, further extendable to 240-vial capacity in future if needed.
- 12-vial capacity configuration, Vial size to use 10 mL, 20 mL and 22 mL headspace vials with:
- Magnetic crimp or screw caps; flat or rounded bottom without any need of Vial adapter

13. Computer:

- Suitable High-End factory fitted Compatible Computer workstation should come along with GCMS

14. Consumables:

- All essential spares & consumables like: EI Filament, Spacer, Septa, Graphite ferrule, Vespal Ferrule, Washers, Nuts, Glass Inserts Split / Split less, O-ring, Standard Tuning Sample (PFTBA), Aluminum Packing, Standard OFN Sample, Vacuum pump Oil, FID jet, FID Nozzle etc. should be provided for trouble Free maintenance for 3 years along with the system.

15. Gas Cylinder:

- UHP Grade Helium Gas with Double Stage SS Diaphragm Regulator-2 set FOR GCMS
- UHP Grade Hydrogen Gas with Double Stage SS Diaphragm Regulator 1set (FOR FID)
- UHP Grade Zero Air Gas with Double Stage SS Diaphragm Regulator 1 set (FOR FID)
- Gas purification panel for all required gases 10  $\mu$ L liquid - 2Nos & 5ml Gas Tight Syringe -1 No.
- Gas line: Complete installation of suitable He-gas line for smooth running of the instrument with all necessary accessories like double stage gas cylinder regulator, purification panel, gas line with Stainless Steel tube etc.

16. Additional:

- Supplier should arrange application training by their personnel for minimum three working days

after the installation of the system.

17. Special Note:

- All specifications offered Needs to be supported with original literature as well as the same literature needs to be available on the official website of the manufacturing company.
- The offer to be made in details with all technical specification, item details with part no's.
- All supporting technical literatures complying the technical specification need to be attached along with the order.
- Extensive Training to be provided at installation site with a qualified application specialist
- Online UPS having minimum one-hour backup
- Warranty: Minimum three years onsite comprehensive warranty from date of installation
- CE/USA/European Standard

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:

Address of Bidder/Tenderer:

Tender No.:


Name of offered goods/items:

Make and Model of equipments/items:

Place:

Date:

Seal & Signature of Bidder

 <b>BIHAR ANIMAL SCIENCES UNIVERSITY</b>		
	NIT No.	-:-
	Group No.	-:-
	Quantity	-:-
	Name of Equipment/Items	-:-
	Last date of online submission (Date and Time)	-:-
	Earnest Money (in Rs.)	-:-
	Bid Processing Fee of Beltron (in Rs.)	-:-
	Non-Refundable and to be paid only through e-Payment mode i.e. Internet payment gateway (Master or Visa Card)/Internet Banking/NEFT or RTGS	-:-
FINANCIAL BID FORMAT		
TO BE FILLED IN BY BIDDER		
1	Name of the Bidder	:
2	Address of the Bidder	:
3	Name of Equipment / item as mentioned in Tender Document	:
4	Name & Model No. of offered goods/items	:
5	Total F.O.R. Bid price (inclusive of all taxes and duties, GST) in Indian Currency, INR	:
6	Total F.O.R. Bid pricing in words	:
Note	Note-1: The cost of optional items shall be indicated separately, if any	
	Note-2: Bihar Animal Sciences University, Patna have DSIR Certificate (Reg. No.: TU/V/RG-CDE (1293)/ 2020 Dated: 07.01.2021). So, price should be quoted considering this point.	
		<b>Central Purchase Officer</b> <b>Bihar Animal Sciences University, Patna</b>

Annexure- I

**MANUFACTURER'S AUTHORISATION FORM**

To,  
**The Vice-Chancellor,  
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/item 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/item 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

**MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY**

To,  
The 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 ....., 20.....

.....  
(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



**SELF-DECLARATION – NO BLACKLISTING**

Date:.....

To,  
The Vice- Chancellor  
Bihar Animal Sciences University,  
Patna-800014, Bihar

Dear Sir/Madam,

Ref: Tender for the supply and installation of various laboratory equipments/instruments for the College of Fisheries, Kishanganj.

In response to the Tender Document for the supply and installation of various laboratory equipments/instruments for the College of Fisheries, Kishanganj, BASU, I / We hereby declare that presently our Company / firm \_\_\_\_\_ is having unblemished record and is not declared ineligible for corrupt & fraudulent practices either indefinitely or for a particular period of time by any State/ Central Government/ PSU/Autonomous Body.

We further declare that presently our Company/ firm \_\_\_\_\_ is not blacklisted/debarred and not declared ineligible for reasons other than corrupt & fraudulent practices by any State/ Central Government/ PSU/ Autonomous Body on the date of Bid Submission.

If this declaration is found to be incorrect then without prejudice to any other action that may be taken, my/ our security may be forfeited in full and the tender if any to the extent accepted may be cancelled.

Thanking you,

Yours faithfully,

Place:

Signatures\_\_\_\_\_

Date:

Name\_\_\_\_\_

Seal of the Organization\_\_\_\_\_

**AUTHORIZATION LETTER FOR ATTENDING TENDER OPENING**

No.....

Date.....

To,  
The Vice-Chancellor,  
Bihar Animal Sciences University,  
Patna-800014, Bihar

Subject: Tender No. \_\_\_\_\_ Due on \_\_\_\_\_.

Sir,

Mr./Ms. .... has been authorized to be present at the time of opening of above tender on my/our behalf. His/her attested signatures are as under:

Yours faithfully,

Signature & Seal of the Bidder

**PREVIOUS SUPPLY ORDERS FORMAT**

Name of the Firm:

<b>Order placed by [Full address of Purchaser]</b>	<b>Order No. and Date</b>	<b>Description and quantity of ordered equipment</b>	<b>Value of order</b>	<b>Date of completion of delivery as per contract</b>	<b>Has the equipment been installed satisfactorily? [Attach a certificate from the Purchaser/ Consigner]</b>	<b>Contact person along with telephone No. Fax No. E-mail address</b>

Signature and Seal of the Manufacturer/ bidder .....

Place:

Date:

### TECHNICAL SPECIFICATIONS

The Required Technical Specifications of Scientific Equipments/Instruments as follows:

Gr. No.	Equipment Name	Qty.	Specifications
01.	<b>ATOMIC ABSORBANCE SPECTROPHOTOMETER (AAS)</b>	<b>01</b>	<p>1. General:</p> <ul style="list-style-type: none"> <li>• Optical Double-Beam system with Facility of automated changeover from Flame to future Graphite Furnace upgradation</li> <li>• Future Ready Graphite furnace upgradation.</li> </ul> <p>2. Optics:</p> <ul style="list-style-type: none"> <li>• Wavelength range: 150 to 900 nm</li> <li>• Variable band width: 0.2 to 1.0 nm spectral bandwidths</li> <li>• Monochromator: Monochromator and prism or Grating with 1800lines/mm blazed at 240nm</li> <li>• No. of lamps mount: Minimum 6</li> <li>• Background Correction: High intensity D2 for flame as well as Zeeman with Graphite Furnace back ground correction</li> <li>• Burner height: Automatic optimization of burner height</li> <li>• Fuel Flow: Automatic optimization of fuel flow</li> <li>• Detector: PMT [Photomultiplier tube] OR Solid State Detector (CMOS)</li> </ul> <p>3. Other Features:</p> <ul style="list-style-type: none"> <li>• Suitable air compressor should be there Graphite Furnace Atomization</li> <li>• Integrated Zeeman background correction.</li> <li>• Monochromator: Echelle type</li> <li>• Suitable Air Compressor to be supplied of Internationally Reputed Brand</li> <li>• Suitable Branded Desktop Computer with original software loaded. AAS software</li> </ul>

			<p>for automatic analysis, parameter setting, concentration computation, baseline correction, report generation. QA/AC data logging, etc</p> <ul style="list-style-type: none"> <li>• Online UPS having minimum one-hour backup</li> <li>• Warranty: Minimum three years onsite comprehensive warranty.</li> <li>• Should have CE/USA/European Standard</li> </ul>
02.	<p><b>HIGH PERFORMANCE SPECTROPHOTOMETER (HPLC)</b></p>	01	<p>1. PUMP:</p> <ul style="list-style-type: none"> <li>• Quaternary Gradient Pump (4 solvents) with inbuilt degasser minimum four channel.</li> <li>• Flow rate of 0.01 -10 ml/min</li> <li>• System back pressure of minimum 10,000 to 12,000 psi for the entire flow rate range.</li> <li>• Flow rate accuracy of <math>\pm 1.0\%</math> or better</li> <li>• Flow precision of <math>&lt;0.05\%</math> RSD or <math>\pm 0.020</math> min SD, whichever is greater</li> <li>• Solvent rack and solvent bottles (at least four) also to be quoted</li> <li>• System should have the gradient delay volume variable option low to high with multiple mixer for minimum band spreading, higher theoretical plates, higher resolution.</li> </ul> <p>2. Manual Injector Manual Sample Injection System:</p> <ul style="list-style-type: none"> <li>• Manual Injection valve with 20<math>\mu</math>l, 500<math>\mu</math>l, 2ml sample loop syringe with accessories to fit the pump</li> </ul> <p>3. Auto Sampler:</p> <ul style="list-style-type: none"> <li>• The Auto sampler should operate at pressures in the range 10,000 to 12,000 psi</li> <li>• The linearity of the auto sampler must be <math>r &gt; 0.99999</math> (caffeine in water).</li> <li>• The auto sampler must offer automated barcode recognition of the type of sample rack or Well plate and detection of empty sample segments.</li> </ul>

- The complete eluent flow path must be compatible with eluent conditions (pH 2-12, max. 1 mol/L chloride concentration, no buffer)
- The injection principle of the auto sampler must be in-line split-loop (also called flow through needle) for high reproducibility injections with no sample loss.
- The auto sampler must support a sample capacity minimum 200 vials. Position.
- The injection range of the auto sampler is 0.01–100µL
- The injection volume precision of the auto sampler < 0.25% RSD (Caffeine in water), typically < 0.5% area RSD for 0.5 µL (caffeine in water).
- Sample temperature 4–40 °C with Temperature stability of ±1 °C

4. Detector:

Photo Diode Array Detector:

- With D2 lamp for UV range and tungsten lamp for Visible range or any other suitable source wavelength range of :190-800 nm or higher with 10mm path length flow cell.
- Lamp house temperature control facility should be available for better sensitivity & accuracy.
- Lamp Optimization facility should be available with the detector.
- Wavelength Accuracy ±1.0 nm, self-calibration with D-alpha line, verification with holmium oxide filter.

5. Columns:

Suitable C185UM250X4.6MM HPLC COLUMN

6. Software:

- The software should be an original licensed copy software with clear part number mentioned in the offer along with latest version computer/laser printer with original operating software should be quoted.

			<p>7. Computer &amp; Printer:</p> <ul style="list-style-type: none"> <li>• Display size: 23.8-inch Full HD with Anti-Glare Display, Processor: 10th Gen Intel Core i5, Processor speed: 2.1 GHz OS: Pre-Loaded Windows 10 (Genuine), Pre-Installed: MS Office Home, RAM size: 8 GB, ROM: 1TB HDD Ports: 2 USB 3.1 Gen2, 2 USB 2.0</li> </ul> <p>8. Other requirements:</p> <ul style="list-style-type: none"> <li>• The published specification should be validated by online literatures by the bidders</li> <li>• The specification is the minimum and higher model will be given references</li> <li>• Online UPS having minimum one-hour backup</li> <li>• Warranty: Minimum three years onsite comprehensive warranty from date of installation</li> <li>• CE/USA/European Standard</li> </ul>
03.	<p align="center"><b>GAS CHROMATOGRAPHY MASS SPECTROPHOTOMETRY (GC-MS)</b></p>	01	<p>1. System:</p> <ul style="list-style-type: none"> <li>• Gas Chromatography-Mass Spectrometer (GC-MS) with original licensed windows-based software and two capillary Injectors. Easily swappable interchangeable injector/detector position as per the requirement in the future.</li> <li>• All gases flow should be adjustable/controlled by software with no manual control.</li> <li>• Auto shut down of instrument in case of leak detection in carrier gas.</li> </ul> <p>2. GC Oven:</p> <ul style="list-style-type: none"> <li>• Temperature Programming Ramps/Platue: &gt;24</li> <li>• Should have an operating range of ambient to 450°C.</li> <li>• Maximum Heating Rate: 120°C/min; Maximum Number of Ramps to facilitate better analysis of environmental pollutant.</li> <li>• EPC Pressure Range: 0-140psi or better</li> <li>• Retention time repeatability: &lt;0.0008 min Overheat protection.</li> </ul>

- Typical peak area repeatability: <0.3 % RSD
- Provision to install two or more columns, Retention time lock facility preferable.
- Ambient rejection: < 0.01 °C per 1 °C

3. Pneumatics:

- System should have pneumatic Electronic Flow Control for all injectors & detectors.

4. Injectors - Split / Split less injector: Qty-1

- Split / Split less injector for capillary Columns with Septum Purge functions
- Must be suitable for all capillary columns, 50 um to 530 um id
- Split ratio range: 10000:1 or better, must be available to avoid column overload
- Maximum operating temperature up to 400°C
- Efficient carrier gas saver function to change from Helium to Nitrogen flow gas in future.
- Must have electronic septum purge flow control to eliminate carry-over
- Should have upgradation facility of Isolation mode to allow column change without breaking the vacuum.

5. Injector- PTV : Qty-1

- Large Volume injection.
- On Column injection
- Temperature programming of up to 3 ramps at up to 860 °C/min

6. Mass Spectrometer:

- MS system should be offered with air-cooled >290 Litre single vacuum output turbo molecular pump, EI ion source and with the following specifications:
- Should have dual filaments in all ionization modes. Source with Programmable heating at 350 °C.
- It should have accurate regulation of emission current up to 350 µA or more with improved regulation at low current.
- It should have Integrated, dual filament



assembly mounted with the same geometry with improved filament lifetime and effective regulation of emission current across the available emission current range.

- It should have constant calibration gas pressure for optimum system tuning.
- The GC transfer line temperature should be programmable up to 400 °C.
- The system should have suitable technology to prevent neutrals to gain entry into the main analytical quadrupole.
- Mass Stability: 0.1 u/48 hours
- Mass Range: 2 –1000 u
- Sensitivity: EI scan sensitivity 2000:1, by 1 micro liter injection of 1pg/ul OFN standard scanning from 50 to 300 amu at nominal 272.
- EI SIM Instrument detection limit should be 5fg.
- Detector : 10KV conversion dynode detector with Overdrive lens
- Turbo Molecular Pump: turbo molecular pump with capacity of 250L/sec

7. Ion Source:

- Should have provision for Selected Ion Monitoring Scan while simultaneously acquiring data in the Full Scan Mode.
- Should be Free from any form wired connection, easy to clean, easy to maintain off-axis ion source, with suitable facility to carry out helium ion burn in source before the main analytical quadrupole.

8. Field upgradation:

- System should be Field upgradeable with the following Features
- Analysis of High boiling components directly into the MS bypassing the GC by injecting directly to MS.
- Upgradation with high sensitive source to achieve an IDL <1fg for highly sensitive application.

9. Library: Latest NIST-2020 library with

license

10. Columns: (Qty: 2 numbers)

- DB5MS/HP5MS/EB5MS or equivalent column with dimension – 30m x 0.25 mm x 0.25µm.

11. Flame ionization Detector : Qty 1

- Should be compatible with Capillary column and packed column
- Flameout detection and automatic re-ignition
- Minimum Detectable Level (MDL): <1.5 pg C/s or better
- Linear dynamic range: >10<sup>7</sup>

12. Head Space Sampler:

- Typical area repeatability <0.8% RSD or better
- 12 Vials upgradable to 120-vial capacity with vial loader and 3 removable 40-vial racks, further extendable to 240-vial capacity in future if needed.
- 12-vial capacity configuration, Vial size to use 10 mL, 20 mL and 22 mL headspace vials with:
- Magnetic crimp or screw caps; flat or rounded bottom without any need of Vial adapter

13. Computer:

- Suitable High-End factory fitted Compatible Computer workstation should come along with GCMS

14. Consumables:

- All essential spares & consumables like: EI Filament, Spacer, Septa, Graphite ferrule, Vespal Ferrule, Washers, Nuts, Glass Inserts Split / Split less, O-ring, Standard Tuning Sample (PFTBA), Aluminum Packing, Standard OFN Sample, Vacuum pump Oil, FID jet, FID Nozzle etc. should be provided for trouble Free maintenance for 3 years along with the system.

15. Gas Cylinder:

- UHP Grade Helium Gas with Double Stage SS Diaphragm Regulator-2 set FOR GCMS
- UHP Grade Hydrogen Gas with Double Stage SS Diaphragm Regulator 1set (FOR FID)

- UHP Grade Zero Air Gas with Double Stage SS Diaphragm Regulator 1 set (FOR FID)
- Gas purification panel for all required gases 10 µL liquid - 2Nos & 5ml Gas Tight Syringe -1 No.
- Gas line: Complete installation of suitable He-gas line for smooth running of the instrument with all necessary accessories like double stage gas cylinder regulator, purification panel, gas line with Stainless Steel tube etc.

16. Additional:

- Supplier should arrange application training by their personnel for minimum three working days after the installation of the system.

17. Special Note:

- All specifications offered Needs to be supported with original literature as well as the same literature needs to be available on the official website of the manufacturing company.
- The offer to be made in details with all technical specification, item details with part no's.
- All supporting technical literatures complying the technical specification need to be attached along with the order.
- Extensive Training to be provided at installation site with a qualified application specialist
- Online UPS having minimum one-hour backup
- Warranty: Minimum three years onsite comprehensive warranty from date of installation
- CE/USA/European Standard