कीटनाशक सूत्रीकरण प्रौद्योगिकी संस्थान

Institute of Pesticide Formulation Technology (IPFT)

(An Autonomous Institution)
Department of Chemicals & Petrochemicals,
Ministry of Chemicals & Fertilizers
Sector-20, Udyog Vihar, **Gurugram – 122 016 (Haryana)**

T E N D E R

FOR

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF

LABORTORY INSTRUMENT

Plan Budget : 2016-17

FOR

INSTITUTE OF PESTICIDE FORMULATION TECHNOLOGY
SECTOR – 20, UDYOG VIHAR
GURUGRAM – 122 016 (HARYANA)

DOCUMENT – I

Invitation to Tender
General Condition of Tender
Special Condition of Tender
Technical Specifications

INVITATION TO TENDER

Dear Sir / Madam,

Reference No. : IPFT/PLAN/2016-17/INSTRUMENS/**FEB-2017**/1

Description of Work : Supply, Installation, Testing & Commissioning of Lab Instruments for Institute of Pesticide Formulation Technology at Sector 20, Opposite Ambience Mall, NH-8, Udyog Vihar, Gurugram-122 016, Haryana.

With reference to your letter dated …… we enclose here with blank tender forms.

Please note that :

(a) Tenders are to be submitted in two bids in sealed envelops.

Envelope No. 1 **:** Containing Covering Letter, Invitation to Tenders, Terms & Conditions of Tender, Technical Specifications and EMD.

Envelope No. 2 **:** Containing Commercial Bid.

Please quote separately for each instrument (both envelope No. 1 & 2).

The name of the **Equipment** for which tender are submitted, shall be **written clearly on the sealed cover**. Tender shall be received in the Office of the Director, IPFT at Sector-20, Opposite Ambience Mall, NH-8, Udyog Vihar, Gurugram – 122 016, Haryana upto 2.30 PM on **07th March, 2017**. The tender received after the due date and time is liable to be rejected.

(b) The tender will be opened on **07th March, 2017** at 3.00 PM in the Office of the Director, IPFT at Sector–20, Opposite Ambience Mall, NH-8, Udyog Vihar, Gurugram-122016, Haryana in the presence of those tenderers or their agents who may choose to be present.

(c) Any particulars or information regarding the proposed supply can be obtained from the Office of the Director, IPFT at Sector–20, Opposite Ambience Mall, NH-8, Udyog Vihar, Gurugram-122 016, Haryana on any working day during office hours.

(d) The tender should be accompanied by necessary Earnest Money Deposit (EMD) in the form of Crossed Demand Draft / Banker's Cheque in favour of **Institute of Pesticide Formulation Technology** payable at Gurugram / New Delhi.

(e) No interest will be payable on Earnest Money.

(f) Tender forms are not transferable.

(g) The tender should remain valid for acceptance for a period of six months from the date of opening the tender.

(h) Relevant information/certificate called for in the enclosed instruction sheet should be annexed to the tender promptly. Non-receipt of any information or certificates with tender, may entail rejection of the tender.

(i) Canvassing in any form will entail disqualification.

Thanking you,

Yours faithfully,

DIRECTOR
Institute of Pesticide Formulation Technology (IPFT)
Gurugram – 122 016 (Haryana)

SUBMISSION OF TENDER

From :

M/s ……

……

……

To,

The Director
Institute of Pesticide Formulation Technology
Sector – 20, Opp. Ambience Mall, NH-8
Udyog Vihar, **Gurugram – 122 016 (Haryana)**

1. I / We hereby tender for execution of the **Works of Supply, Installation, Testing & Commissioning of _____ for Institute of Pesticide Formulation Technology at Sector 20, Opp. Ambience Mall, NH-8, Udyog Vihar, Gurugram-122016, Haryana as per TENDER DOCUMENT** within the time schedule of completion of work for jobs, as separately signed and accepted by me/us, at the schedule of rates quoted by me/us for the whole work in accordance with Notice/Letter inviting Tender, Terms & Conditions, Schedule of Rates, Specifications for materials and workmanship, time schedule of completion of job and other documents and papers all as detailed in the Tender Documents.

2. It has been explained to me/us that the time stipulated for jobs and completion of Works in all respects and in different stages mentioned in the "Time Schedule" of completion of jobs and signed and accepted by me/us is the essence of the contract. I/We agree that in the case of failure on my/our part to strictly observe the time of Completion mentioned for jobs or any of them and to the Final Completion of work in all respects accordingly to the schedule set in the said "Time Schedule" of completion of jobs, I/We shall pay compensation to IPFT as per the provisions and stipulations contained in General Conditions of Contract and I/We agree to recovery being made as specified therein. In exceptional circumstances, extension of time which shall always be in writing may, however be granted by the Director at his entire discretion for some items of work, and I/We agree that such extension of time will not be counted for the extension of completion dates stipulated in the said "Time Schedule" of completion of jobs.

3. Should this tender be accepted, I/We hereby agree to abide by and fulfill all terms and conditions referred to above and in default thereof, to forfeit and pay to IPFT such sums of money as are stipulated in conditions contained in General Tender Notices and other Tender Documents.

4. I / We hereby pay the Earnest Money Deposit (EMD) of ₹ ……/- (Rupees …… only) by Demand Draft / Banker's Cheque No. …… dated …… in favour of **"Institute of Pesticide Formulation Technology"** payable at **Gurugram / New Delhi.**

I/We enclose herewith evidence of my/our experience of execution of works of similar nature and magnitude carried out by me/us in the prescribed Performa.

Dated the …….. day of…….

Yours faithfully,
Signature of the Tenderer
with seal of the firm

Name and designation of authorized
Person signing the tender on behalf
of the Tenderer

PART - I

GENERAL CONDITIONS OF TENDER

1. We are interested in material of indigenous manufacture or of foreign make available from ready stock.

2. In case of imported material, mention the price of goods as FOB basis and stating packing/forwarding/documentation charges etc. (each one) separately, if applicable. Insurance and airfreight charges upto IGI Airport, New Delhi should be mentioned separately. If exact value is not known, approximate charges may be mentioned. **Where there is no mention of packing, forwarding, freight, insurance charges offers shall be rejected as incomplete**. Based on previous supplies to various customers, please mention chargeable weight of the final consignment, in commercial bid. This will help us to calculate approx. freight charges, in case FOB order is placed with you. Foreign manufacturers should quote in foreign currency.

3. In case of **imported material**, the dispatch of the goods should be preferably through Air-India. In case the facility of Air-India is not available in your country, specific mention to this effect should be mentioned in your proforma invoice. The port of shipment should be the country of origin. Trans-shipments and part shipments are not permitted

4. In case of **imported material**, indicate the percentage of Indian Agency commission, which shall be payable in Indian Rupees directly by us to the authorized Indian Agent, after installation, testing and commissioning of the instrument. In case Indian Agent submits the quotation, valid authorization letter must accompany the same from principals.

5. One Agent cannot represent two suppliers or quote on their behalf for a particular equipment.

6. The validity of the offer should not be less than 180 days.

7. A Demand Draft / Banker's cheque as EMD amount drawn in favour of "Institute of Pesticide Formulation Technology" payable at New Delhi / Gurugram, must be enclosed with the Technical Bid and photocopy of the same to be enclosed with commercial bid. All tender received without EMD shall be summarily rejected. Micro & Small Enterprises (MSEs) registered with NSIC will be allowed exemption from payment of tender document fee, EMD and submission of Performance Bank Guarantee in accordance with the rules/policies of the Govt. of India. Firms registered with Government/PSU's are not exempted from payment of EMD.

8. Operation / Maintenance Manual and IQOQ data sheet to be supplied along with the equipment.

9. Copy of the latest price list, applicable in India, must be enclosed with your offer (in Commercial Bid only).

10. Please ensure the quoted price is not more than the price offered to any other customer in India to whom this particular item has been sold, particularly to Government Organization.

11. Enclose with your offer a certificate that the equipment is of latest technology and will not be obsolete and accessories & spare parts will be supplied as and when required.

12. It may be confirmed that essential spare parts of this equipment are available in India with your Indian Agent along with the Engineer for after sale service of equipment. It should be noted that the installation of the equipment has to be carried out immediately.

13. Provide the list of users in India, particularly Govt. Organization. Also enclose performance certificate, if available.

14. The offer must be submitted in two separate envelops, one containing Technical bid along with EMD and second containing Commercial bid, duly sealed from outside and kept in an envelop. The outer envelope must specify the technical/ commercial bid, as the case may be. It may be noted that in case of non-compliance of any of these conditions, the offer is liable to be rejected.

15. The commercial bid must mention the prices of all items asked for individually and then summed up at last i.e. package deal for all items which are essential for the system as per our tender upto Ex-works / FOB or FOR / CIF should be mentioned. Optional items asked for can be submitted separately in the commercial bid.

16. Pre-installation requirement if any, should invariably be mentioned clearly. Installation/Training will be the full responsibility of the supplier/Indian Agent. If any short-shipment etc. are noticed, the same will be arranged immediately with all charges to this effect to be borne by Supplier / Indian agent. The refund of EMD will become due only after satisfactory receipt and installation of the equipment.

17. **The last date of receipt of tenders is 07th March, 2017**. The technical bids will be opened on due date in the Office of Director – IPFT in the presence of representatives of tenderer, if any, by a committee. Late / Delayed tenders shall not be opened and returned back to the bidders. Request for postponement is not likely to be entertained.

18. The Technical Bid and Price Bid in two separate sealed cover should be put in a third cover superscripting as under :

Tender Enquiry No. **:** IPFT/PLAN/2016-17/INSTRUMENS/**FEB-2017**/1

Date of Opening & Time **:** **07th March, 2017 at 1500 hrs.**

Name of Equipment **:** _____

To,

THE DIRECTOR
INSTITUTE OF PESTICIDE FORMULATION TECHNOLOGY
SECTOR – 20, UDYOG VIHAR,
OPP. AMBIENCE MALL, NH-8,
GURUGRAM – 122 016 (HARYANA)

19. In case of indigenous supplies, the rates quoted should be on FOR Destination basis including insurance and freight pre-paid.

20. In case of indigenous supplies, the rates of Sales Tax (in full), Excise Duty etc. should be clearly indicated. Form C & D is not applicable to us.

21. The date of delivery should be strictly adhered to otherwise the Director, IPFT reserves the right not to accept delivery in part or full and claim liquidated damages of 1% per week subject to maximum of 10% of the total value of supply order.

22. In case of indigenous material, payment will made by Account Payee cheque after successful installation, testing and commissioning of the equipment.

23. In case of imported material, payment will be made through Letter of Credit. All the bank charges outside India will be borne by the beneficiary.

24. Printed conditions of the quotation shall not be binding on us.

25. Quotation must be clearly written or typed without any cutting or over-writing; All cutting/over-writings must be initialed and stamped.

26. If the items are not covered under Open General License (OGL) of exim policy, the same may also be mentioned clearly to obtain prior Special Import License (SIL) from DGFT, otherwise demurrage accrued due to delay in the clearance of consignment will be your responsibility.

27. Kindly mention approx. weight of the consignment, to calculate freight charges etc. through our consolidation, if required (Applicable in case of imported instrument).

28. If the vendor has supplied identical or similar equipment to other Government Labs/Institute the details of such supplies for the preceding three years shall be given together with the prices eventually or finally paid (price to be disclosed in commercial bid).

29. All correspondence in this regard must bear our reference number, failing which queries cannot be answered to.

30. Conditional tenders shall not be accepted.

31. Enclose the Compliance Statement in the following format along with technical bid : failing which offer will be treated as incomplete and is liable to be ignored.

Format of Compliances Statement

Tender Enquiry Specifications	***Specifications Offered***	***Compliance to Tender Enquiry Specifications : Whether Yes or No***	***In case of Non-compliance, deviation from Tender Enquiry Specifications to be included in un-ambiguous terms.***

32. The acceptance of the quotation/offer will rest with the Director, IPFT, who does not bind himself or accept the quotation and reserves the right to himself to reject or partially accept any or all the quotations received, or to any condition without assigning any reason.

33. JURISDICTION :

This contract shall be subjected to the jurisdiction of the Courts of Haryana only.

34. ARBITRATION :

All disputes or difference whatsoever which shall at any time arise between the parties hereto in relation to or connected with this contract (other than those in respect of which

the decision of DIRECTOR is by this CONTRACT expressed to be final and binding) shall after written notice by either party to the CONTRACT to the other and to the Appointing Authority herein before mentioned be referred for adjudication to a sole arbitrator to be appointed as herein after provided.

For the purpose of appointing the Sole Arbitrator referred to above, the Appointing Authority (Director – IPFT) will send within thirty days of receipt of the notice, to the SUPPLIER a panel of three persons name who shall all be presently unconnected with the organization for which the WORK is executed.

The SUPPLIER shall on receipt of the names as aforesaid, select any one of the persons named to be appointed as a sole Arbitrator and communicate his name to the Appointing Authority within thirty days of receipt of names. The Appointing Authority halls thereupon without any delay appoint the said person as the Sole Arbitrator. If the SUPPLIER fails to communicate such selection as provided above within the period specified, the Appointing Authority should make the selection and appoint the selected person as the Sole Arbitrator.

If the Appointing Authority fails to send to the SUPPLIER the panel of three names as aforesaid within the period specified, the supplier shall send to the appointing Authority a panel of three names of persons who shall all be unconnected with either party. The Appointing Authority shall on receipt of the names as aforesaid select as one of the persons named and appoint him as the Sole Arbitrator. If the Appointing Authority fails to select the person and appoint him as the Sole Arbitrator within 30 days of receipt of the panel and inform the SUPPLIER accordingly, the SUPPLIER shall be entitled to appoint one of the persons from the panel as the Sole Arbitrator the communicate his name to the Appointing Authority.

If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another Sole Arbitrator shall be appointed as aforesaid.

The WORK under the CONTRACT shall, however, continue during the Arbitration proceedings and no payment due or payable to the SUPPLIER shall be withheld on account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties fixing the date of the first hearing.

The Arbitrator may, from time to time, with the consent of the parties, enlarge the time for making the publishing the award.

The venue of arbitration shall be in Haryana.

The fee, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The costs of the reference and of the award including the fee, if any, of the Arbitrator shall be in the discretion of the Arbitrator who may direct to and by whom and in what manner, such costs or any part there of shall be paid and may fix or settle the amount of costs to be so paid.

The award of the Arbitrator shall be final and binding on both the parties. The provisions of the Indian Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force, shall apply to the arbitration proceeding under this clause.

PART – II

SPECIAL CONDITION OF CONTRCT :

In addition to the General Conditions of contracts contained in Part-I above, the following special conditions shall apply to contracts for supply of plant/machinery/manufactured equipment. These special conditions where they differ from the general conditions in Part-I shall override the latter.

FINAL TEST :

The final tests as to performance and guarantee shall commence immediately after completion of installation.

REJECTION OF DEFECTIVE CONSIGNMENT :

If the completed instrument or any portion thereof before it is finally accepted is found to be defective or fails to fulfill the requirements of the contract. The purchaser shall give supplier notice setting forth the details of such defects or failure and the supplier shall forthwith rectify the defective instrument to be replaced in place of plant or alter the same to make it comply with the requirements of the contract. Should the supplier fail to do so within a reasonable time the Purchaser may reject and replace at the cost of the supplier, whole or any portion of the plant as the case may be, which is defective or fails to fulfill the requirements of the contract. Such replacement shall be carried out by the purchaser within a reasonable time and at reasonable price and where reasonably possible to the same specifications and under competitive conditions. The supplier shall be liable to pay to the Purchaser the extra cost if any of such replacement delivery and or/or erected as provided for in the contract, such extra cost being the difference between the price paid by the purchaser, under the provisions above mentioned for such replacement and the contract price for them. Supplier shall refund to Purchaser any sum paid by the Purchaser to the supplier in respect of such defective instrument to be replaced in place of instrument.

WARRANTY :

The supplier has to provide warranty for a period as specified in the technical specification after the instrument has been put into operation. The supplier shall be responsible for any defects that may develop under conditions provided for by the contract and under proper use, arising from faulty materials, design or workmanship in the plant or from faulty erection of the instrument by the supplier, but not otherwise and shall rectify such defects at his own cost when called upon to do so by the purchaser who shall inform in writing such defects.

If it becomes necessary for the supplier to replace or renew any defective portions of the instrument for the purpose of rectification under the clause, the provisions of this clause shall apply to the portions of the plant so replaced or renewed till the end of the above mentioned period. If any defects be not rectified within reasonable time, the, purchaser may proceed to get the work done at supplier’s risk and expenses but without prejudice to any other rights which the Purchaser may have against the supplier in respect of such defect.

GUARANTEE FOR SPARE PARTS :

The supplier shall undertake that before going out of production of the spare parts he will give adequate advance notice to the Purchaser so that the latter may order his requirement of spares in one lot if he so desires.

The supplier shall further guarantee that if he goes out of production of spare parts, then he will make available blue-prints, drawings of spare parts and specifications of materials at no cost to the Purchaser, if and when required in connection with the equipment to enable Purchaser to fabricate or procure spare parts from other sources.

The provision of the clause shall remain effective and binding upon the supplier even after the completion or expiration of the contract and till the instruments supplied under the contract is in use by the Purchaser.

TRAINING :

The supplier has to provide complete training at site for operation (including trouble shooting) of the instrument.

EMD DETAILS

For Laboratory Instruments

Sr. No.	*Description of Items*	*Quantity*	*EMD (In ₹)*
Analytical Division :			
1.	Rotary Vacuum Evaporator	01 No.	12,000.00
2.	Centrifuge	01 No.	3,000.00
3.	Deep Freezer	01 No.	3,000.00
4.	Flash Point Apparatus	01 No.	3,000.00
5.	Peristaltic Pump	01 No.	4,000.00
6.	Sonicator	01 No.	4,000.00
7.	Digital Hot Air Oven	01 No.	3,000.00
8.	SPE Vacuum Manifold	01 No.	4,000.00
9.	Dry Block Heater	01 No.	3,000.00
10.	GC-MS	01 No.	1,00,000.00
11.	Fume Hood	01 No.	20,000.00
12.	Turbo Vap	01 No.	10,000.00
13.	UPS	01 No.	14,000.00
Bioscience Division :			
14.	Orbital Shaker	01 No.	2,800.00
15.	Real Time PCR	01 No.	30,000.00
16.	Deep Freezer	01 No.	10,000.00
17.	Bio-safety Cabinet	01 No.	14,000.00
18.	Microscope	01 No.	6,000.00
Formulation Division :			
19.	High Pressure Homogenizer	01 No.	70,000.00
20.	Dynamic Surface Tensiometer	01 No.	60,000.00
21.	Digital Balance	04 No.	10,000.00
Pilot Plant :			
22.	Screw Air Compressor Systems	01 No.	40,000.00
23.	Water Treatment Plant	01 No.	30,000.00
24.	Wet Scrubber	01 No.	10,000.00
25.	Industrial Scale	01 No.	4,000.00

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

1. ROTARY VACUUM EVAPORATOR :

Rotary Evaporator :

- Rotation Speed : 20 to 260 RPM or better
- Head Tilt : 0-60° or better
- Rotation Motor Power : 40 Watt or more
- Lift UP/Down : Motor
- System should have high efficient double spiral condenser with anti reflex design.
- Automatic lift up when power failure.
- Antisplash design for safe operation.
- System should have capacity to handle 5ml to 25ml of sample.

Heating Bath :

- Temperature control Range : Ambient~+180 °C or better
- Bath Material : Teflon Quoted
- Temperature Control : PID(LCD/LED)
- Temperature Accuracy : ±1°C (Water) ±2°C(Oil) or better
- Heating Power : 1300 Watt or more
- Bath Diameter : 250mm
- Bath Volume : 4.5L or more

Electronic Vacuum Controller :

- Vacuum Control Range : 0 to 999mbar
- Should have large LCD/LED display
- Vacuum Control Precision : ±1mbar
- Should have capacity to handle different vacuum pressure with different holding time.
- Built in Anticorrosive vacuum sensor with high precision
- Control ON/OFF of vacuum to prolong the pump life span
- Alarm when the vacuum control fail to reach the desire value.

Chiller :

- Temperature Control Range : -15° to ambient or better
- Temp. Stability : ±1°C (PID/LCD/LED) or better
- Refrigeration Capacity : 500W or higher
- Pump Capacity : 3.5L/min@10psi or better

Vacuum Pump :

- Environmental friendly oil free Diaphragm pump
- Vacuum Pressure : 7-9 mbar or better
- Pumping speed (L/min) : 33 or better
- Noise (dB) : ≤45 or lower

Warranty : Three Years

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

2. CENTRIFUGE :

Volume / Capacity	:	400 ml
Maximum Speed rpm	:	6000
Maximum RCF “G”	:	5070
Digital Display Timer Range in min.	:	0-59
W x D x H mm	:	380 x 470 x 300

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

3. DEEP FREEZER :

Type	:	Chest type
Volume/ Capacity	:	290 L or more
Minimum Temperature	:	≤ - 40 °C
Temperature accuracy	:	± 1 °C or better
Digital display & Temp. Controller	:	Yes
No. of compartment	:	3 – 5
Refrigerator lock	:	Yes
Type of door	:	Solid
Alarm	:	Visual and acoustic
Calibration certificate	:	Yes

External Voltage Stabilizer for the lab refrigerator is to be provided.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

4. FLASH POINT APPARATUS :

a) Supplied with Oil Cup Cover, Fitted Stirrer, Thermometer Socket, SS Water Bath and Stand.

b) A concealed electric heater (with regulator) is fitted at the bottom for operation on 220V AC circuits.

c) Oil test jet, electrically heated with energy regulator control.

d) Thermometer IP 74c wide range and IP75C.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

5. PERISTALTIC PUMP :

- **Flow rate** – 15 ml to 200 ml/min
- **Tubing size** – 3 mm to 10 mm ID with 1 to 1.5 mm wall thickness
- **Number of channels** – Two
- **Tubing** – Teflon / Tygon / Prothane II **/** norprene
- **Speed** – variable, 10 to 500 RPM
- **Display** – LED
- **Motor** – 0.12kw to 0.2 kw ,Reversible
- **Pressure** – up to 4-10 bar
- **Power Supply** – 220-240v, 50 Hz, Single phase AC, power cord & plug appropriate to user's country.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

6. SONICATOR :

a)	Bath type sonicator		
b)	Tanks volume	:	5 ltrs.
c)	Ultrasonic power	:	150 or higher Watts
d)	SS lid with wire mesh basket		
e)	Voltage	:	220V/ 50Hz
f)	Timer	:	1 min – 30 minutes

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

7. DIGITAL HOT AIR OVEN :

- Temperature range - ambient+10 ^{0}C to 250^{0}C
- Temperature display - digital led readout
- Timer - 1 min to 99 hrs.
- Resolution - 1^{0}C
- Temperature control accuracy : 1^{0}C at 100^{0}C
- Interface : RS-232 with controlling software
- Power : 230V AC, 50/60 HZ

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

8. SPE VACUUM MANIFOLD :

- 10 or 20 positions for sample should be available.
- Tank should be chemically resistant and made upof vacuum-safe glass.
- Ultra high molecular weight polyethylene lid.
- Vacuum gauge with control valves and a safety release valve.
- Height-adjustable racks (to fit 10,12 and 16 mm tube diameters).
- Also standard rack for 16mm tubes.
- Compatible with standard luer-tipped SPE and filtration columns.
- Individually controlled PTFE stopcocks.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

9. DRY BLOCK HEATER :

- Four blocks
- Fast heat up and cooling time
- Step less temperature adjustment
- Smooth touch keypad menu
- Over heat protection
- Easy replacement of metal blocks
- Auto fault detection and buzzer alarm
- Blocks available in different sizes
- Easy calibration when required
- Easy setup and operation
- Heating Time ≤20min (25°C to130°C)
- Temp Range Ambient +5°C - 130°C
- Temp Uniformity ± 0.5°C
- Temp Accuracy ± 0.5°C (@40°C)
- Temp Accuracy ± 1°C (@120°C)
- Display Accuracy 0.1°C
- Time Range 1 min ~ 99h 59min
- Blocks size for 1.5 ml tube, 2ml tube, 15 ml tube and 50 ml tube
- Power AC 220V / 110V (optional)

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

10. GC-MS :

The most latest and advanced model should be offered from product line of the respective vendors / manufacturer's without compromising on Quality aspects with following minimum Specifications :

GC should be capable of installing at least two injectors, two columns and two detectors.

A. Oven :

1. Capable of housing at least 2 columns.
2. Temperature : 450 °C or more.
3. Cooling down rate : from 450 to 50 °C within 4.0 min
4. Set point : 0.1°C or less.
5. Temperature programming facility.
6. Ramps : 20 or more
7. Max. ramp rate : 120 °C/min or more

B. Injection Port (two) :

a) Capillary port (split/splitless)

1. Facility to fit 50 µm to 530 µm columns.
2. Pressure range : 145 psi or more.
3. Pressure set point and control precision : 0.01 psi or better
4. Maximum temperature: 400 °C or more.
5. Separate heating zone.
6. Digital display of gas flow, temperature etc.
7. Electronic pneumatic control (EPC) or equivalent
8. Temperature setting through computer software.
9. Split ratios upto 7500:1 or more.

b) Capillary port (split/splitless)

1. Facility to fit 50 µm to 530 µm columns.
2. Pressure range : 145 psi or more.
3. Pressure set point and control precision : 0.01 psi or better
4. Maximum temperature: 400 °C or more.
5. Separate heating zone.
6. Digital display of gas flow, temperature etc.
7. Electronic pneumatic control (EPC) or equivalent
8. Temperature setting through computer software.
9. Split ratios upto 7500:1 or more.

c) Auto Sampler :

1. Auto sampler tray for 100 vials or more.
2. User installable.
3. Sample tray positioned away from GC to prevent heating of samples.

C. Mass Spectrometer :

1. Ionization modes: EI, PCI & NCI. Both EI and CI sources should be provided.
2. CI : must be capable to operate with different reagent gasses & electronic flow control for reagent gasses.
3. Scan speed - At least in the range of 16000 to 20000 u/sec; SIM - Selected Ion Monitoring (SIM) capabilities of a minimum of 100 groups of 60 ions; SIM speed - Must be able to go down to 0.1 msec Mass range - Maximum mass of 1050 u or better;
4. The source should be inert, preferably be made of a non-coated inert material.
5. Ion source temperature - Ion source should have heating capacity of 350°C or more.
6. Vacuum pump capacity: minimum 250 liters.
7. The mass axis stability should be equal to or better than 0.1 amu/48 hours. The quadrupole should be heated/ non heated.
8. The quadrupole must preferably be hyperbolic (or equivalent) in shape to allow better transmission of ions. MS transfer line - The MS transfer line must heat up to a maximum of 300 - 350°C or better;
9. Linear Dynamic range (electronic) : 10^6 or better
10. Scan increment (step size) - Scanning at the increments of 0.1 u;
11. The data system should be equipped with tools needed to lock a retention time or equivalent technology to a reference value even when the column is clipped for maintenance. The locked method should be transferable to other GC/GCMS to give the same retention times.
12. The system should preferably have a provision for prompting for maintenance using user defined maintenance schedule with display of current status
13. The system should have a feature to reduce power consumption when in idle condition.
14. The system should automatically create SIM method from scan data file of an injected standard
15. Installation check out sensitivity: Minimum demonstrable EI SIM Instrument detection limit (IDL) should be ≤ 10 fg for 8 sequential injections of OFN
16. Installation check out sensitivity: EI scan sensitivity should be atleast1500:1 for 1 ul injection of 1pg/ul OFN standard on normal routine applications and to be performed during installation.
17. Latest NIST 2014 library original licensed version.
18. Pesticide library with at least 800 compounds original licensed version.

D. Electron Capture Detector (ECD)

1. Electronic pressure and flow control of auxiliary purge/make up gases.
2. Suitable for all types of column (capillary and megabore).
3. Maximum temperature : 400°C or more.
4. Electron source : 63Ni
5. Minimum Detection Limit : 5 fg/mL lindane or less.

E. Chromatography Software / Workstation Instrument Control Software :

1. Software should be compatible with Windows OS.
2. Capable of working both online and offline for data acquisition and manipulation.
3. Original Licensed version with separate CD/DVD of the instrument software with specific registration number should be provided.

F. PC with Printer :

All-in-One PC with minimum specification as - Intel core i5/i7 processor, 2.4 Ghz or more, 8GB RAM, 1 TB hard disk, DVD drive capable of reading and writing DVD/CD, 24" FHD touch display, NVIDIA(R) 4GB GDDR3 Video card, Integrated audio, Wireless Wi-Fi & Bluetooth, Wireless Keyboard and Mouse, Windows OS (original licensed version) version as suitable for latest version of instrument operating software, MS-Office 365 (original licensed version), Nero burning rom software (original licensed version), One portable backup hard drive of 1 TB capacity, Multifunctional B&W laser Printer with scanner and copier.

Warranty : Three years on PC.

G. Start Up Kit :

1. Installation kit must be included.
2. Gas purification panel with following cylinders (Volume or water capacity of 46.7 L) and appropriate dual stage steel diaphragms regulators :

   Helium (≥99.9995%) – 2 no.

   Nitrogen (zero grade) – 2 no.

   Methane (99.999%) – 2 no. (Volume or water capacity of 10.2 L)

   Isobutane (99.999%) – 2 no. (Volume or water capacity of 10.2 L)

   Cylinders should be provided with gas purity certificate.
3. Copper/SS tubing (250 ft), nuts and ferrules for all the gases.

H. Accessories and Consumables :

1. Syringe (10 µl) for auto sampler injection (20 No.).
2. Auto sampler vials : 1000 vials with screw cap.
3. Solvent vials/ wash vials and waste vials : (10 No. each in addition to shipment kit).
4. Vespel Graphite ferrules for capillary columns (0.25 mm i.d) injector end and interface end (30 No. each).
5. Septa (low bleed) for injector (50 Nos.).
6. Appropriate nuts to fit capillary columns to the injector and interface and detector (20 each).
7. Inlet liner for Splitless, Split (with glass/quartz wool at optimum position) (20 No. each).
8. O-ring for injector liner (20 No.)
9. Gold seal or equivalent injector seal, if present (20 No.)
10. Gas tube cutter and Column cutter (2 No.)
11. Tool kit.

12. Vacuum pump oil (10 L)
13. Split vent cartridge (5 No.)
14. Oil mist trap for pump (2 No.)
15. High capacity imported Gas purifier (Instrument manufacturer recommended) (2 No.) in addition to standard supply with the instrument.
16. GC-MS Column (95% Dimethyl polysiloxane, 5% phenyl, extremely low bleed suitable for GC-MS system 30mX0.25mmX0.25μm) – 5 No.

I. Warranty : Three years warranty from the date of installation and final acceptance.

J. Training : Training and demonstration about application and maintenance of the equipment at customer site.

K. UPS System :

Suitable online constant voltage (220 volts) 20 KVA UPS, IGBT based UPS system with inbuilt Isolation transformer, Input: Three phase, Output: Single phase, Battery: Maintenance free Exide battery with appropriate racks having capacity to provide minimum 2 hour backup at full load of 20 KVA, Interconnecting cables, One bundle (90 m) appropriate Havells cable (Capacity: as recommended by UPS manufacturer), Appropriate Havells MCBs along with MCB boxes for input and output supply for UPS (Capacity: as recommended by UPS manufacturer), Battery breaker, Dedicated earthing as recommended by UPS manufacturer/ GC-MS manufacturer is required to be made separately.

Warranty : Three years on UPS.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

11. FUME HOOD :

Dimensions Inside fume hood working volume : (WxDXH) mm : (1500x750x2250)
Slide type vertical sash door

Internal service panel with Individual controls on the front Panel (i.e. outside) of fume hood :

a) Indian twin electric sockets of 5/15 A (5Nos.). Wire and cables fire retardant grade.

b) 1 x 40 W fluorescent lights with suitable reflector for Lighting with vapour proof fitting for proper illumination.

c) Utility services – Cold water (2 No.) with drip Cup, nitrogen, Compressed air and Vacuum (with respective pressure gauges on front panel).

d) Sink water tap with drain arrangement : Worktop will have sink sealed with silicon sealant for drainage with water tap on left and right backside of worktop.

e) Scaffold points of Dimension (12 to 13 mm Dia.) of about 9 in nos.

Material of Make :

a) **Frame -** Stainless steel.

b) **Panels -** Composite material suitably laminated or lined with chemical resistance material, easily cleanable.

c) **Shutter -** Vertical rising sash counter-balanced with pulley and counter-weight system. Toughened Float Glass sash (4 mm thick) smooth and light sash operation. Clean openable height 750 mm.

d) **Work Bench-**30 mm.thick. Synthetic ceramic/Stoneware/ with raised Edges (1-1/4'').

e) **Switch Sockets -** Indian twin switch (5/15 A).

f) **Fume duct** - FRP with polypropylene lined internally.

g) **Blower -** Interstitial 7 point active kinetics exhaust system (for light, normal and heavy fumes) with baffle to ensure rapid exhaust of fumes. Also ensure low noise level Centrifugal corrosion resistant exhaust complying **ISO:5801** in aerodynamic performance, impeller shall be of fire retarding polypropylene.

h) **Scrubber -** FRP packed vertical scrubber housing, 1000CFM (Pump- 2HP or better).

i) **Liquid recirculation System -** PVC piping, PVC nozzles, Acid and Caustic resistant pump, PVC spray header.

j) **Packing material -** Good adsorbing material having hollow, geometric shape designed for turbulent mixing of liquid and gas. Packing will be constructed of network of ribs, struts and flat surface for efficient flow distribution.

Safety Features :

a) Safe and secure air flow technology.

b) Fume hood should be designed for excellent ergonomics and maximum safety for operator.

c) Fume hood of sash shall be fixed with anti fall device.

Additional Features :

a) Chemical & apparatus storage base cabinet.

b) Air flow monitor (Digital).

c) Temperature indicator.

Warranty : Two years from the date of successful installation.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

12. TURBO VAP :

1.	Number of Samples	:	50 or more
2.	Tube Capacity	:	50 test tubes or more
3.	Water Bath Temperature	:	Ambient to 80 °C or better
4.	Max. sample volume	:	30 ml or more
5.	Gas pressure range	:	0 to 20 psi or better
6.	Tube racks of various sizes should be included	:	
7.	Timer range	:	1 to 99 minutes or better
8.	Microprocessor controlled operation		
9.	Warranty	:	3 years minimum

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

13. UPS :

1. Suitable online constant voltage (220 volts) 20 KVA UPS, IGBT based UPS system with inbuilt Isolation transformer.
2. Input : Three phase, Output: Single phase.
3. Battery : Maintenance free Exide battery with appropriate racks having capacity to provide minimum 2 hour backup at full load of 20 KVA.
4. Interconnecting cables.
5. One bundle (90 m) appropriate Havells cable (Capacity: as recommended by UPS manufacturer).
6. Appropriate Havells MCBs along with MCB boxes for input and output supply for UPS (Capacity: as recommended by UPS manufacturer).
7. Battery breaker.
8. Dedicated earthing as recommended by UPS manufacturer/ GC-MS manufacturer is required to be made separately.
9. Warranty : Three years on UPS.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

14. ORBITAL SHAKER :

MOC Inner	:	Chamber and trays made of stainless steel (SS-304)
Capacity	:	280 Ltrs.
Volume	:	10 Cuft
Temperature Control	:	Microprocessor Based Digital Temperature Indicator-cum-Controller
Display	:	LED with Set Value (SV) and Process VALUE (PV)
Inner Chamber Size (WxDxH) in mm	:	660x660x690 mm
Insulation	:	High Density PUF insulation for tighter temperature controls
Shaking Trays Size		510 x 510 mm
Shaking Frequency	:	Up to 250 rpm (adjustable)
Shaking Amplitude	:	25 mm
Type	:	Forced Convection Type
Temperature Range	:	5^{o}C to 60^{o}C
Temperature Accuracy	:	$+0.5^{o}$C
Safety	:	Over temperature limiter switch prevents overheating
Cyclic Timer	:	Fitted with cyclic programmable timer.
Light Bank	:	Consisting of fluorescent lamps to provide illumination for photosynthetic applications
Shaking Motion	:	Permanent Magnet DC Drive for continuous operations
RPM Display	:	DIGITAL DISPLAY

- Chamber sterilizer through a U.V. germicidal tube.
- Stationary perforated shelf made of S.S. (304 Grade) (Set of 1 trays)
- Communication Port with interface and data cable to download data to your PC.
- Servo Voltage Stabilizer (Cap : 4 KVA)
- Spare lotus clamps made of S.S
- Warranty : 2 years

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

15. REAL TIME PCR :

- 96 Well x 0.2ml Gradient Real PCR Machine with HRM capability to perform SNP Genotyping without probe.
- Sample Size should be 1-50µL in 0.2 ml tube size.
- System should be peak ramping rate of 5^0C/sec.
- Gradient Range should be 30-100^0C with Span of 24^0C.
- System should come with compatible PC and Licensed Melt Analysis Software.
- The system should also have a heating lid temperature range upto 105^0C.
- System should have a block temperature range of 0-100 ^{0}C with temperature accuracy of ± 0.2 ^{0}C and a temperature uniformity of ± 0.4^0C at 90^0C.
- System should have minimum Six LEDs excitation filters with a Excitation/Emission range of 450- 730nm & detection with Solid state Photodiode.
- System should have a dedicated HRM Channel.
- System should have separate detection filters in order to avoid overlapping of signals or crosstalk.
- System should be capable of multiplexing with a dynamic range of 10 orders of magnitude and sensitivity of Single copy.
- System should be compatible with all the chemistry.
- System should have a scanning time of less than 12 sec for all channels and less than 3sec for a singe channel.
- System should have a user friendly software with the ability to do Absolute quantification, Relative quantification, melt curve analysis, allelic discrimination with scatter plot analysis and High resolution melting.
- System should open to makes of consumable.
- System should be capable of communicating to Windows 8 and Windows 7 with an ability to connect to PC.
- System should have a power backup for 2 hrs.
- System has 1 years warranty and CE-conform.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

16. DEEP FREEZER :

1. Microprocessor controlled, Vertical Type, Ultra Low Temp. Freezer with digital LED displays with at least two internal chamber lockable doors or better.

2. Capacity at least 300 to 400 liters or more.

3. Temperature range -40ºC to -86ºC, adjustable with increment of 1ºC.
4. Working efficiently at wide ambient temperature range of 10ºC to 32ºC or better.

5. Built-in Over/Under voltage compensating technology to reduce wear & tear.

6. Microprocessor controlled Cascade freezing technology with Compressor 2 nos. x 1 H.P each.

7. VIP insulation for better temperature stability or better.

8. Interior made up of Stainless steel / Cryo-plastic coated steel with stainless steel selves and exterior Galvanized steel with powder coated.

9. Malfunction Audio-visual alarms on display for over/under temperature, sensor defect, condenser radiating effect, high ambient temp., probe failure, hot condenser, remote alarm contact and power failure.

10. Pressure equalization design / Vacuum relief port for easier door opening.

11. Safety key lock with door and multi level password protection to prevent unauthorized access to control panel.

12. Appropriate servo voltage stabilizer should be quoted as standard.

13. Quoted model should be CE certified & certificate should be provided along with quote.

14. Voltage 220-240V, 50/60 Hz.

15. Warranty at least 36 months or better.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

17. BIO-SAFETY CABINET :

1. Class II, Type A2 with single blower should automatically handle HEPA filter pressure.
2. Size 4 feet.
3. Sash Opening 8 inches.
4. Inflow velocity – 100-105 fpm
   Down flow velocity – 55-60 fpm
5. Filter efficiency : 99.97% (0.3µm) HEPA filter
6. Construction : Stainless steel of SS 304 including side walls with
   Uncoated 18 gauge removable single piece SS 304 work surface
7. Noise level < 65dba from 15 cm from above work surface and 12 inches from front sash.
8. Display – Microprocessor controlled large single piece line in sight LCD/LED display with real time HEPA filter life remaining in the form of BAR graph.
9. Electrical Sockets – At least two electrical socket
10. Motor/Blower – DC ECM motor
11. Base stand with wheels from the same manufacturer
12. Certification : NSF 49 certified and list should enclosed with tender
13. Validation on site must be offered
14. RS232 port to connect system with building managing software
15. Warranty : 1 year standard and extended for next 4 year on spares.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

18. MICROSCOPE :

Stand	:	Ergonomically designed rugged stand for long time comfortable usage.
Optical System	:	Infinity and Color corrected Optical System.
Illumination	:	Built-in transmitted Modular illumination system with Koehler system. with LED & Halogen 30w.
Focusing	:	Stage movement in Z axis should be 15 mm or more stroke in coarse movement and 2 to 2.5 µm stroke in fine focus graduation.
Stage	:	Mechanical stage should have coaxial X and Y movement with the size 140 to 200 mm x 130 to 140 mm. Traveling range : 75mm (X) x 30mm (Y) with good quality ball-bearing specimen holder.
Observation Head	:	30° inclined ergonomic Trinocular tube, siedentopf design, suitable for eyepieces upto field of view 20mm. Inter Pupillary Distance range 48-75 mm and eyepiece tubes can be swiveled either way for easy viewing angle of the operator. Diopter adjustment in both eyepieces ±5.
Condenser	:	Abbe type with iris diaphragm N.A. : 1.25
Objective Lens	:	Fully Plan Achromatic objectives (anti-fungus) 4 X N.A. : 0.10 10 X N.A. : 0.25 40 X N.A. : 0.65 100 X Oil immersed N.A. : 1.25
Eye Pieces	:	10 X anti-fungus /18 mm Field of View (FOV) with 30 mm tube size.
Nose Piece	:	Quadruple inward-facing revolving nosepiece.
Camera & Software		Sensor : CMOS color sensor Basic resolution : 2560 (H) x 1920 (V)=5.0 Megapixel Pixel size : 2.2 µm x 2.2 µm Chip size : 5.70 mm x 4.28 mm, equivalent to 1/2.5" (diagonal 7.1 mm) Camera should have facility for Image capture & Post analysis. **Computer Workstation :** Branded computer with i-7 processor with 1TB HDD, 4GB RAM, DVD Writer, 21" colour monitor, Licensed compatible operation system Win 7/ Win 8 , Keyboard, optical mouse, UPS, microsoft office latest, antivirus (validity one year).

The Microscope should have the following :

- CE, ISO and EC/ UL/FDA (CDRH) certification.
- There should be a provision for upgrading microscope to fluorescence(Preferably LED) type in future manufactured by the same company (please attach catalogue).
- The company should have a service track record for at least 10 years and provide list of users and performance certification (ten years) of the microscope in at least five institutes of national importance.
- Microscope should be fully manufactured by the principal company.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

19. HIGH PRESSURE HOMOGENIZER :

A. General Specifications :

Equipment should be suitable for high pressure homogenization of dispersions, emulsions at laboratory scale.

B. Technical Specifications :

Sl. No.	***Parameter***	***Specifications***
1.	Pressure range	Upto 30000 psi (2068 bar)
2.	Pressure control	Digital
3.	Minimum sample volume	14 ml
4.	Flow rate	60-100 ml per minute or more
5.	Pump actuator	Electro-hydraulic
6.	Feed temperature	Max. 75^0 C
7.	Reservoir	Glass with 300 ml. Capacity or more
8.	Interaction chamber	Diamond
9.	Power	AC
10.	Warranty / Extended warranty	2 years
11.	Items to be supplied with equipment	1. Cooling coil. 2. S.S. reservoir assembly of 1 lit. Capacity. 3. Ceramic auxiliary processing module.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

20. DYNAMIC SURFACE TENSIOMETER :

A. General Specifications :

Equipment should be suitable for measurement of interfacial tension by drop analysis.

B. Technical Specifications :

Sl. No.	***Parameter***	***Specifications***
1.	Measurement Range	10^{-6} to 2000 mN/m
2.	Measurement Resolution	10^{-6} mN/m
3.	Minimum Sample Volume	Surrounding Liquid : 1ml, Drop Liquid : 1 to 4µl
4.	Temperature Range	Ambient to 120°C with internal sensor range of -10°C to 180°C
5.	Camera	15 fps at 2560 × 1920 px or better with USB 3.0 connectivity
6.	Optics	1.4x zoom with fixed focus, field of view 6 mm × 4.5 mm, 2.3 µm resolution or better
7.	Illumination	LED and stroboscope with 469 nm wavelength or better
8.	Sample Stage Tilting	±20° or better
9.	Capillary Drive Resolution	1 rpm
10.	Capillary System	Septum free filling system for easy sample preparation. Quick lock loading for fast sample exchange. Drop creation at press of a button.
11.	Interface	USB for connection from instrument to PC**.**
12.	Software	Suitable for fully automatic measurements.
13.	Power	AC, 220-240 V
14.	Warranty/ Extended warranty	2 years
14.	Consumables	1. 500 µl Glass Syringe with Luer-Lock Connector, 2. 1 ml Disposable Syringe with Luer-Connector, set of 100 pieces. 3. Disposable Needle, Stainless Steel, with PP Luer-Lock Connector, diameter: 0.5 mm, length:38 mm, set of 50 pieces. 4. Brushes for cleaning of capillary. 5. Capillary with inner diameter of 3.25 mm and 4.6 mm with closing plugs.
15.	Computer & Printer	Instrument is to be supplied with PC (Window 8, 8 GB RAM, 1TB HDD, 21inch TFT monitor, optical mouse) and Laser printer.
16.	Items to be supplied with equipment	1. Laboratory Cryostat, Range–10°C to 100°C, Temperature stability +/- 0.04°C. Integral cooling compressor, Digital display, Display Resolution: 0.1°C, CFC Free. 2. UPS 5 KVA - min. two hours back-up.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

21. DIGITAL BALANCE :

A. General Specifications :

Digital open pan balance for laboratory use.

B. Technical Specifications :

Sl. No.	***Parameter***	***Specifications***
1.	Capacity	5000-5100 gms.
2.	Display	Digital, touch screen
2.	Readability	10 mg.
3.	Repeatability	10 mg.
4.	Linearity	20 mg.
5.	Pan size	180 mm Dia or 180mm X 180 mm (LxB) or more.
6.	Calibration	Fully automatic time & temperature controlled internal adjustment.
7.	Connectivity	USB, data transfer to MS Window.
8.	Warranty/ Extended Warranty	2 years.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

22. SCREW AIR COMPRESSOR SYSTEMS :

A. General Specification :

- Compressed air should be moisture and oil free (<0.003ppm).
- Compressor should be enclosed designed to industrial standard.
- Compressor should be perfect to highest level of safety.

B. Technical Specification :

1) Screw Air compressor with variable frequency drives (VFD) :

I. Capacity : 93-226 cfm
II. Working Pressure : 8 bar g
III. Cooling System : Air cooled
IV. Noise Level : 68-69 dB(A)
V. Electric Motor : 50HP (37 kW).

2) Refrigeration Air Dryer :

I. Flow: 300 cfm.
II. Maximum pressure : 16 bar g
III. Cooling Media : Air
IV. Electric Power : AC Three phase, 400-440 volt, 50Hz

3) Air Receiver :

I. Capacity : 1000 lit
II. Max Pressure : 10 bar g

4) Screw air compressor has to be supplied with suitable accessories :

I. Pre filter : for removal of particles down to 1 micron including coalesced liquid water and oil with flow capacity 280 cfm.
II. Fine Filter : for the removal of particles down to 0.01 micron including water and oil aerosol with flow capacity 280 cfm.
III. Activated carbon filter : for removal of oil vapour and hydrocarbon (oil content <0.003 mg/ m^3 with flow capacity 280 cfm.
IV. G.I piping/gauges /valves and all required assembly hardware for installation of compressed air supply system/ its accessories.

5) Appropriate control system (AC Three phase 400-440 volt, 50Hz) for control and display all the operating parameter.

6) To be quoted necessary spare/consumable parts for two years.

7) Installation and Demonstration : Erection and commissioning of screw air compressor along with its accessories, its include mechanical/electrical field assembly at IPFT site and demonstrate the functioning.

8) Warranty two years / extended warranty four years on **air** end.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

23. WATER TREATMENT PLANT :

A. General Specification :

I. Effluent water treatment plant suitable for treated effluent water generated from pesticide formulation plant.

II. Capacity : 5 KLD.

B. Technical Specification :

Sl. No	***Items/ equipments***	***Volume/Size/MOC***
1.	Screen Chamber	RCC
2.	Oil & Grease Trap	RCC
3.	Equalization Tank	RCC
4.	Treated Water Tank	LDPE
5.	Sludge disposal system	As required.
6.	Flash Mixer/ Settler	5 mm thk. MS sheet with FRP Lining
7.	Foundation for items/Equipments	As per Drawing /Requirement. (RCC)
8.	Chemicals dosing Tanks with agitators	LDPE
9.	Agitators for Mixing	SS -304 Shaft & Impeller.
10.	Bar Screen	SS -304

C. Effluent water treatment plant has to be provided with all appropriate accessories/equipments like Effluent Pump, Filter Feed pump, Chemicals Dosing Pump, Pressure sand filter, Activated Carbon filter, connecting piping (uPVC), fitting, valves and all required assembly hardware etc.

D. Appropriate electrical control panel and necessary electrical cable /cable try etc.

E. To be quoted additional required consumable items i.e. chemicals for 06 Months.

F. Erection and commissioning of effluent water treatment plant including mechanical /electrical works.

G. All the civil works in the scope of vender. (extension in existing shed on plant –if required).

H. Provision of Training : Operation and miner maintenance.

I. Warranty/Extended Warranty of 24 Months.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

24. WET SCRUBBER :

A. General Specification :

I. Wet scrubber suitable for treated air pollutant/dust generated from pesticide formulation plant.

II. Working Capacity : 10000 cfm.

B. Technical Specification :

Sl. No.	***Item/equipments***	***Specification /Volume/Size/Quality***
1.	Tank	750 liters.
2.	Air outlet chimney	25 feet.
3.	Centrifugal air Blower	10 Hp
4.	Recirculation/spray pump	1 Hp
5.	Material of construction	Mild Steel.
6.	Sampling point	Min 3 or more.
7.	Air ducting within the plant	Size : 150 x150 MM , length :150 Mtr. & Make –GI/ MS.

C. Wet scrubber system has to be provided with all appropriate assembly hardware like, Air inlet/ outlet piping (GI/ MS), sampling pipes (GI/ MS) and all required assembly hardware etc.

D. Appropriate electrical control panel.

E. Erection and commissioning of wet scrubber system, control panel, shed (if required) and all field assembly/wiring etc.

F. Provision of Training: Operation and miner maintenance.

G. Warranty/Extended Warranty of 24 Months.

TECHNICAL SPECIFICATION
OF
LABORATORY INSTRUMENTS

25. INDUSTRIAL SCALE :

A. General Specification :

I. Scale is suited for industrial use in wet environment.

II. Scale should be easy to operation and cleaning.

B. Technical Specification :

Sl. No.	***Description***	***Specification (Volume/Size/MOC)***
1.	Weighting Capacity	300 kg.
2.	Readability	0.02 kg.
3	Load Cell (IP rating)	4 No. (IP-67)
3.	Base size/platform size	800 X 800 mm
4.	MOC of load plate material	Stainless Steel (SS-304).
5.	Base Frame	Stainless Steel (SS-304), adjustable feet and level indicator.
6.	Type of display	IP Rating – 67 ,Large ,high contrast display (25mm LCD with backlight.) and Stainless steel hosing
7.	Weighting function	Simple tasks
8.	Display and Control Unit	Remoted (Cable connection for flexible indicator position)
9.	Power Supply	AC, 200-240 volt.

C. Erection and commissioning of scale and all field assembly/wiring etc.

D. Warranty of 24 Months.

कीटनाशक सूत्रीकरण प्रौद्योगिकी संस्थान

Institute of Pesticide Formulation Technology (IPFT)

(An Autonomous Institution)
Department of Chemicals & Petrochemicals,
Ministry of Chemicals & Fertilizers
Sector-20, Udyog Vihar, **Gurugram – 122 016 (Haryana)**

T E N D E R

FOR

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF

LABORTORY INSTRUMENTS

PLAN BUDGET : 2016-17

FOR

INSTITUTE OF PESTICIDE FORMULATION TECHNOLOGY
SECTOR – 20, UDYOG VIHAR
GURUGRAM – 122 016 (HARYANA)

DOCUMENT – II

COMMERCIAL BID

BILL OF QUANTITIES
FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF LABORTORY INSTRUMENT

Sr. No.	*Description of Items*	*Unit*	*Rate in Figures & In Words*	*Amount (In ₹)*
1.	Rotary Vacuum Evaporator			
2.	Centrifuge			
3.	Deep Freezer			
4.	Flash Point Apparatus			
5.	Peristaltic Pump			
6.	Sonicator			
7.	Digital Hot Air Oven			
8.	SPE Vacuum Manifold			
9.	Dry Block Heater			
10.	GC-MS			
11.	Fume Hood			
12.	Turbo Vap			
13.	UPS			
14.	Orbital Shaker			
15.	Real Time PCR			
16.	Deep Freezer			
17.	Bio-safety Cabinet			
18.	Microscope			
19.	High Pressure Homogenizer			
20.	Dynamic Surface Tensiometer			
21.	Digital Balance			
22.	Screw Air Compressor Systems			
23.	Water Treatment Plant			
24.	Wet Scrubber			
25.	Industrial Scale			

Photocopy of the Demand Draft / Banker's Cheque No. …… dated …… for ₹ …… towards EMD is enclosed.

Note : Kindly quote for all the items as specified in the technical specifications.

Yours faithfully,

Signature of the Tenderer
with seal of the firm