TENDER DOCUMENT

FOR

PROCUREMENT OF

SCIENTIFIC EQUIPMENT

FOR

FACULTY OF LIFE SCIENCE

JIWAJI UNIVERSITY, GWALIOR

REGISTRAR

JIWAJI UNIVERSITY

GWALIOR - 474011 (M.P.)

JIWAJI UNIVERSITY, GWALIOR

S. No./Store/2020/1010 **Date : 20-10-2020**

Amendment E-Tender Notice

Online-E Tenders on https://mptenders.gov.in are invited from the reputed and established manufacturers/importers and authorized dealers for Supply and Installation of Equipments, Lift, Furniture at SOS, Jiwaji University, Gwalior. The Tender Documents along with all Terms and Conditions can also be seen in University website www.jiwaji.edu

S. No	Tender ID MP/JUG/ Tender No.	Description of work	Qty.	Estimates cost of work	EMD	Cost of Tender (Non refundable)	Time of Completion
1.	2020_JIWAJ_	Supply & Installation of Single Crystal X-ray Diffractometer	01	2,00,00,000/-	6,60,000/-	12,500/-	4 Months
2.		Supply & Installation of Benchtop NMR Spectrometer	01	80,00,000/-	2,40,000/-	10,000/-	4 Months
3.		Supply & Installation of HPC Cluster	01	1,50,00,000/-	4,50,000/-	12,500/-	4 Months
4.		Supply & Installation of SEM-EDAX	01	1,00,00,000/-	3,00,000/-	12,500/-	4 Months
5.		Supply & Installation of PPMS	01	2,20,00,000/-	6,60,000/-	15,000/-	4 Months
6.		Supply & Installation of GC-MS	01	70,00,000/-	2,10,000/-	10,000/-	4 Months
7.		Supply & Installation of CHN Analyser	01	40,00,000/-	1,20,000/-.	5,000/-	4 Months
8.		Supply & Installation of AAS	01	35,00,000/-	1,20,000/-	5,000/-	4 Months
9.		Supply & Installation of Automated Nucleic Acid Extractor	01	25,00,000/-	70,000/-	5,000/-	4 Months
10.		Supply & Installation of Real Time PCR	01	20,00,000/-	60,000/-	5,000/-	4 Months
11.		Supply & Installation of Automatic Kjeldahl Nitrogen Analyser	01	15,00,000/-	45,000/-	2000/-	4 Months
12.		Supply & Installation of Laboratory Fermentor	01	12,00,000/-	36,000/-	2000/-	4 Months
13.		Supply & Installation of Gel Doc System	01	12,00,000/-	36,000/-	2000/-	4 Months
14.		Supply & Installation of Total Organic Carbon System	01	9,00,000/-	27,000/-	2000/-	4 Months
15.		Supply & Installation of Biosafety Cabinet	01	8,00,000/-	24,000/-	2000/-	4 Months
16.		Supply & Installation of Aerosol Mass monitor	01	4,00,000/-	12,000/-	2000/-	4 Months
17.		Supply & Installation of Microarray System	01	1,00,00,000/-	3,00,000/-	12,500/-	4 Months
18.		Supply & Installation of Cryostat	01	16,00,000/-	48,000/-	2000/-	4 Months
19.		Supply & Installation of Automatic Rotary Microtome	01	15,00,000/-	45,000/-	2000/-	4 Months
20.		Supply & Installation of Ultra-Low Temperature Freezer (-80^{0}C)	01	8,00,000/-	24,000/-	2000/-	4 Months
21.		Supply & Installation of Behaviour & Activity Test System	01	65,00,000/-	1,95,000/-	10,000/-	4 Months
22.	2020_JIWAJ_	Supply of Furniture	01	70,00,000/-	2,10,000/-	10,000/-	4 Months
23.	2020_JIWAJ_	Supply & Installation of Lift	06	1,20,00,000/-	3,60,000/-	12,500/-	4 Months
24.	2020_JIWAJ_	Selling of Raddee	-	10,00,000/-	30,000/-	2,000/-	3 Months
25.	2020_JIWAJ_	Supply of Degree Container	80,000	9,00,000/-	27,000/-	2000/-	3 Months
26.	2020_JIWAJ_	Supply & Installation of Hand Made Paper Machinery & other equipments	Complete Plant	9,00,000/-	27,000/-	2000/-	3 Months
27.	2020_JIWAJ_	Supply & Installation of RFID for Library	-	18,00,000/-	54,000/-	2000/-	3 Months
28.	2020_JIWAJ_	Supply & Installation of Computer Center for Examination	-	5,00,00,000/-	15,00,000/-	15,000/-	4 Months

1. Last date of purchase of tender on line **23.11.2020** up to 5:00 P.M.
2. Last date of submission of online price bid **25.11.2020** up 5:00 P.M.
3. Last date of submission of earnest, affidavit and other required document for fulfill technical bid by speed/ regd. post up to **27.11.2020** time 5:00 P.M.
4. Opening of Technical bid **28.11.2020.**
5. The remaining term and condition, corrigendum and amendment is issued (if any) related above were will be published on website only.
6. Registrar reserves the right on cancel, amend or extend the tender at any time without assigning any reason.

Registrar

JIWAJI UNIVERSITY, GWALIOR

Tender No./Store/2020/ **Date:**

Online e-Tender Notice

Online tenders are invited through **www.mptenders.gov.in** from Manufacturer/ Authorized distributor only, for **Supply of Equipments** at Jiwaji University, Gwalior

Tender document containing terms, conditions & specification of the items can be downloaded from the e-procurement website by paying rupees mention below per equipment cost online tender can also be seen at Universities website www.jiwaji.edu

S. No	Tender ID MP/JUG/ Tender NO.	Description of work	Qty.	Estimates Cost of work	EMD	Cost of Tender (Non refundable)
1.	2020_JIWAJ_	Single Crystal X-ray Diffractometer	01	2,00,00,000/-	6,60,000/-	12,500/-
2.	2020_JIWAJ_	Benchtop NMR Spectrometer	01	80,00,000/-	2,40,000/-	10,000/-
3.	2020_JIWAJ_	HPC Cluster	01	1,50,00,000/-	4,50,000/-	12,500/-
4.	2020_JIWAJ_	SEM-EDAX	01	1,00,00,000/-	3,00,000/-	12,500/-
5.	2020_JIWAJ_	PPMS	01	2,20,00,000/-	6,60,000/-	15,000/-
6.	2020_JIWAJ_	GC-MS	01	70,00,000/-	2,10,000/-	10,000/-
7.	2020_JIWAJ_	CHN Analyser	01	40,00,000/-	1,20,000/-	5,000/-
8.	2020_JIWAJ_	AAS	01	35,00,000/-	1,20,000/-	5,000/-
9.	2020_JIWAJ_	Automated Nucleic Acid Extractor	01	25,00,000/-	70,000/-	5,000/-
10.	2020_JIWAJ_	Real Time PCR	01	20,00,000/-	60,000/-	5,000/-
11.	2020_JIWAJ_	Automatic Kjeldahl Nitrogen Analyser	01	15,00,000/-	45,000/-	2000/-
12.	2020_JIWAJ_	Laboratory Fermentor	01	12,00,000/-	36,000/-	2000/-
13.	2020_JIWAJ_	Gel Doc System	01	12,00,000/-	36,000/-	2000/-
14.	2020_JIWAJ_	Total Organic Carbon System	01	9,00,000/-	27,000/-	2000/-
15.	2020_JIWAJ_	Biosafety Cabinet	01	8,00,000/-	24,000/-	2000/-
16.	2020_JIWAJ_	Aerosol Mass monitor	01	4,00,000/-	12,000/-	2000/-
17.	2020_JIWAJ_	Microarray System	01	1,00,00,000/-	3,00,000/-	12,500/-
18.	2020_JIWAJ_	Cryostat	01	16,00,000/-	48,000/-	2000/-
19.	2020_JIWAJ_	Automatic Rotary Microtome	01	15,00,000/-	45,000/-	2000/-
20.	2020_JIWAJ_	Ultra-Low Temperature Freezer (-80^0C)	01	8,00,000/-	24,000/-	2000/-
21.	2020_JIWAJ_	Behaviour & Activity Test System	01	65,00,000/-	1,95,000/-	10,000/-

1. Online tender can be purchased up to 5.00 PM till 10 Nov. 2020
2. Online price bid can be submitted up to 5.00 PM till 12 Nov. 2020
3. Earnest money (EMD) and other documents can be submitted at Jiwaji University Stores through Speed Post / Registered Post up to 5.00 PM till 15 Nov. 2020
4. Online bid will be opened on 19 Nov. 2020 at 3.00 PM
5. All terms and conditions of the tender can be seen on above websites
6. Registrar Jiwaji University Gwalior reserve right to accept / reject / cancel any tender without stating any reason

Registrar

जीवाजी विश्वविद्यालय, ग्वालियर

Tender No./Store/2020/ **Date:**

// ऑनलाइन e-निविदा आमंत्रण //

जीवाजी विश्वविद्यालय, ग्वालियर के लिए केवल निर्माण/अधिकृत विक्रेता से www.mptenders.gov.in पर ऑनलाइन निविदा आमंत्रित की जाती है जो कि www.mptenders.gov.in से डाउनलोड की जा सकती है, इसके अतिरिक्त विश्वविद्यालय की वेबसाइट www.jiwaji.edu पर भी देखी जा सकती है। विवरण निम्नानुसार है।

निविदा प्रपत्र समस्त टर्म्स एण्ड कंडीशन्स एवं विवरण सहित www.mptenders.gov.in वेबसाइट पर नीचे दी गई राशि ऑनलाइन टेण्डर फीस जमा करने पर डाउनलोड की जा सकती है।

S. No	Tender ID MP/JUG/ Tender NO.	Description of work	Qty.	Estimates Cost of work	EMD	Cost of Tender (Non refundable)
1.	2020_JIWAJ_	Single Crystal X-ray Diffractometer	01	2,00,00,000/-	6,60,000/-	12,500/-
2.	2020_JIWAJ_	Benchtop NMR Spectrometer	01	80,00,000/-	2,40,000/-	10,000/-
3.	2020_JIWAJ_	HPC Cluster	01	1,50,00,000/-	4,50,000/-	12,500/-
4.	2020_JIWAJ_	SEM-EDAX	01	1,00,00,000/-	3,00,000/-	12,500/-
5.	2020_JIWAJ_	PPMS	01	2,20,00,000/-	6,60,000/-	15,000/-
6.	2020_JIWAJ_	GC-MS	01	70,00,000/-	2,10,000/-	10,000/-
7.	2020_JIWAJ_	CHN Analyser	01	40,00,000/-	1,20,000/-	5,000/-
8.	2020_JIWAJ_	AAS	01	35,00,000/-	1,20,000/-	5,000/-
9.	2020_JIWAJ_	Automated Nucleic Acid Extractor	01	25,00,000/-	70,000/-	5,000/-
10.	2020_JIWAJ_	Real Time PCR	01	20,00,000/-	60,000/-	5,000/-
11.	2020_JIWAJ_	Automatic Kjeldahl Nitrogen Analyser	01	15,00,000/-	45,000/-	2000/-
12.	2020_JIWAJ_	Laboratory Fermentor	01	12,00,000/-	36,000/-	2000/-
13.	2020_JIWAJ_	Gel Doc System	01	12,00,000/-	36,000/-	2000/-
14.	2020_JIWAJ_	Total Organic Carbon System	01	9,00,000/-	27,000/-	2000/-
15.	2020_JIWAJ_	Biosafety Cabinet	01	8,00,000/-	24,000/-	2000/-
16.	2020_JIWAJ_	Aerosol Mass monitor	01	4,00,000/-	12,000/-	2000/-
17.	2020_JIWAJ_	Microarray System	01	1,00,00,000/-	3,00,000/-	12,500/-
18.	2020_JIWAJ_	Cryostat	01	16,00,000/-	48,000/-	2000/-
19.	2020_JIWAJ_	Automatic Rotary Microtome	01	15,00,000/-	45,000/-	2000/-
20.	2020_JIWAJ_	Ultra-Low Temperature Freezer (-80^{0}C)	01	8,00,000/-	24,000/-	2000/-
21.	2020_JIWAJ_	Behaviour & Activity Test System	01	65,00,000/-	1,95,000/-	10,000/-

१. ऑनलाइन निविदा प्रपत्र क्रय करने की अंतिम तिथि 10/11/2020 **सायं** 5.00 **बजे तक है**
२. ऑनलाइन बिड डालने का दिनांक 12/11/2020 **सायं** 5.00 **बजे तक है**
३. धरोहर राशि एवं अन्य दस्तावेज स्पीड पोस्ट / पंजीकृत पत्र के द्वारा जीवाजी विश्वविधयालय स्टोर मे 15/11/2020 **सायं** 5.00 **बजे तक प्राप्त की जाएगी**
४. ऑनलाइन बिड खुलने का दिनांक 19/11/2020 3:00 PM **निर्धारित है**
५. निविदा के शेष समस्त जानकारी उपरोक्त दर्शायी गयी वेबसाइट्स पर देखी जा सकती है
६. कुलसचिव जीवाजी विश्वविद्यालय को बिना कोई कारण बताये निविदा स्वीकृत / अस्वीकृत / रद्दीकरण करने का अधिकार होगा

कुलसचिव

NOTICE INVITING TENDER DETAILS

S.No.	Description	
1.	Department name	Jiwaji University Gwalior -474011 (M.P.)
2.	Tender Number	JU/COE /Tender E1/2020
3.	Tender Subject	Supply, Installation & commissioning of Scientific Equipments.
4.	Period of Contract	One Year
5.	Form of contract	Schedule Wise
6.	Tender type	Open
7.	Tender category	Products (both hardware and software)
8.	EMD/Bid Security (INR) (Enclose in separate cover)	1. Single Crystal X-ray Diffractometer-Rs.6.60 lakh 2. Benchtop NMR Spectrometer-Rs.2.40 lakh 3. HPC Cluster-Rs.4.50 lakh 4.SEM-EDAX-Rs.3.00 lakh 5. PPMS-Rs.6.60 lakh 6. GC-MS-Rs. 2.10 lakh 7. CHN Analyser-Rs.1.20 lakh 8. AAS-Rs.1.20 lakh 9. Automated Nucleic Acid Extractor-Rs.0.70 lakh 10. Real Time PCR-Rs.0.60 lakh 11 Automatic Kjeldahl Nitrogen Analyser-Rs.0.45 lakh 12 Laboratory Fermentor-Rs.0.36 lakh 13. Gel Doc System-Rs.0.36 lakh 14. Total Organic Carbon System-Rs.0.27 lakh 15. Biosafety Cabinet-Rs.0.24 lakh 16. Aerosol Mass monitor-Rs.0.12 lakh 17. Microarray System-Rs. 3.00 lakh 18. Cryostat-Rs.0.48 lakh 19. Automatic Rotary Microtome-Rs.0.45 lakh 20. Ultra-Low Temperature freezer (- 80°C)-Rs. 0.24 lakh 21. Behaviour & Activity Test System-Rs.1.95 lakh 22. Furniture – Rs. 3.00 lakh 23. Lift – Rs. 3.00 lakh

		24. Raddi – Rs. 0.30 lakh 25. Degree container – Rs. 0.27 lakh 26. Handmade paper machine & other items - Rs 0.27 lakh 27. RFID for library – Rs 0.54 lakh 28. Computer center for exams – Rs. 15.00 lakh
9.	EMD/Bid security Payable to	Registrar ,Jiwaji University,Gwalior -474011 (M.P.) EMD has to be paid online through www.mptenders.gov.in
10.	Tender fee (non refundable)	The tender fee to be submitted online through www.mptenders.gov.in paid in the favour of Registrar, Jiwaji University, Gwalior.
11.	Downloading of Tender Documents	www.mptenders.gov.in /www.jiwaji.edu
12.	Last date of purchase of online tender	10.11.2020, 5.00 PM
13.	Bid Submission Closing Date	12.11.2020 (5.00 pm)
14.	Submission of E-Bid	www.mptenders.gov.in For delay, University cannot be held responsible.
15.	Technical Specification Bid Opening Date	19.11.2020 (12 noon)
16.	Price Bid Opening	www.mptenders.gov.in
17.	Place of Technical Bid Opening	In the office of Registrar / meeting Hall of Jiwaji University. Gwalior
18.	Officer Inviting Bids/Contact Person	Registrar, Jiwaji University Gwalior - 474 011, (M.P.)
19.	Eligibility Criterion	As per the tender document (Annexure -02)
20.	Procedure For Bid Submission	e-BID has to be submitted through www.mptenders.gov.in.Documents in support of Technical Specifications along with make and models of all the items as per the list mentioned in Annexure -05 duly mentioning the make. Supporting documents of standard certifications. Annexure-02 of tender document duly signed with office seal as a token of acceptance of our standard terms and conditions Latest Income tax clearance certificate. List of customers, to whom the bidder had supplied identical materials in the past along with P.O. details

		and performance report. Annexure -08 of bidding document has to be submitted to The Registrar, Jiwaji University Gwalior.Registrar will not hold any risk and Responsibility for non-visibility of the scanned document or the loss in transit.
21.	General Terms and Conditions	As per tender document

TENDER FEES (To be submitted online)

Sr. No.	Description of Work (Equipment names)	Tender Fees (Non refundable)
1	Single Crystal X-ray Diffractometer	12500.00
2	Benchtop NMR Spectrometer	10000.00
3	HPC Cluster	12500.00
4	SEM-EDAX	12500.00
5	PPMS	15000.00
6	GC-MS	10000.00
7	CHN Analyser	5000.00
8	AAS	5000.00
9	Automated Nucleic Acid Extractor	5000.00
10	Real Time PCR	5000.00
11	Automatic Kjeldahl Nitrogen Analyser	2000.00
12	Laboratory Fermentor	2000.00
13	Gel Doc System	2000.00
14	Total Organic Carbon System	2000.00
15	Biosafety Cabinet	2000.00
16	Aerosol Mass monitor	2000.00
17	Microarray System	12000.00
18	Cryostat	2000.00
19	Automatic Rotary Microtome	2000.00
20	Ultra-Low Temperature freezer (- 80°C)	2000.00
21	Behaviour & Activity Test System	10000.00

Contents of the Tender Document

Annexure – 01

Schedule of Quantity

Supply, Installation and Commissioning of Scientific Equipments at Central Equipment Facility

Sl.No.	**Description of Work**	**Quantity**
1	Single Crystal X-ray Diffractometer	01
2	Benchtop NMR Spectrometer	01
3	HPC Cluster	01
4	SEM-EDAX	01
5	PPMS	01
6	GC-MS	01
7	CHN Analyser	01
8	AAS	01
9	Automated Nucleic Acid Extractor	01
10	Real Time PCR	01
11	Automatic Kjeldahl Nitrogen Analyser	01
12	Laboratory Fermentor	01
13	Gel Doc System	01
14	Total Organic Carbon System	01
15	Biosafety Cabinet	01
16	Aerosol Mass monitor	01
17	Microarray System	01
18	Cryostat	01
19	Automatic Rotary Microtome	01
20	Ultra-Low Temperature freezer (- 80°C)	01
21	Behaviour & Activity Test System	01

Annexure -02

ELIGIBILITY CRITERIA AND SPECIAL TERMS AND CONDITIONS

A. ELIGIBILITY CRITERIA FOR TENDERERS:

- The Company/ the tenderer should be in existence for the last 5 years
- The Company or tenderer should have at least one service Centre in India.
- The tenderer should be a Manufacturer or the authorized representative of equipment manufacturer or other respective products/ items.

B. SPECIAL TERMS AND CONDITIONS :

1. **Delivery Period:** The delivery should be made within 60 days from the date of receipt of purchase order by the tenderer.
2. **Warranty:** All items supplied by the tenderer shall be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative.Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation. After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected
3. **Installation:** The installation should be done at the Instrumentation Facility (IF) as mentioned in the Annexure – 04 enclosed, at no extra cost.
4. **Response Time:** The response time of the tenderer to attend to any complaint open receipt of the complaint/information from the user should not be more than 48 hours.
5. Advance payment either direct or through bank will not be accepted in any case. As per rule, full payment will be made after receipt of material, inspection thereof and after satisfactory installation and working of the entire equipment. In case of imported equipment Site draft option / LC is acceptable.
6. This institution is exempted from payment of Central Excise duty in terms of Govt. Notification No. 1097-Central Excise dated 01.03.1997. Necessary copy to be provided by the University.
7. For imported equipments: The institution is registered with Department of Science and Industrial Research (DSIR) Govt. of India vide Government Notification No. TU/V/RG-CDE(56)/2009, dated 26.11.2009 is exempted from payment of custom duty.
8. Necessary certificate copy shall be provided by the University. The bidder shall be responsible for getting the consignment cleared and deliver the goods. The expenses on it and concessional duties, if any should be included in the cost of the equipment.

9. The tenderer should avoid the use of vague terms such as "extra as applicable". Such tenders will be rejected.

10. Printed conditions on the back of the offer submitted will not be binding unless separately mentioned.

11. Quotations for the accessories to be considered together as one unit and thus total price shall be treated as your bid for the tender. Optional items may be quoted separately. Where the equipment offered is controlled by a preloaded personal computer and it is possible to use an indigenous PC, the same should be quoted instead of an imported PC. The same would apply to a printer or any compiled other accessory or subsystem.

TENDERER
SEAL

Annexure-3

Documents to be enclosed

The following documents should be submitted along with the bidding form otherwise the tenders are liable to be disqualified.

1. All the Supporting documents in respect of Eligibility criteria i.e.

Registration /Incorporation Certificate in support of the existence of the company for required number of years as per the tender schedule eligibility criteria.

List mentioning the addresses and contact persons with phone numbers of the service centres present in India.

Supporting Documents indicating that the tenderer is the Manufacture or the OEM/ Authorized representative of the corresponding items/products.

IT returns for the last three years 2016-17, 2017-2018, 2018-2019

2. Annexure-02 duly signed & office Seal affixed as a token of acceptance of Special Terms and Conditions.
3. Documents in supports of Technical Specifications for the scientific equipments as mentioned in Annexure-05 clearly mentioning the make and model.
4. The list of customers, to whom the bidder had supplied identical material in the past.
5. Annexure-08.

Note:

1. The Registrar Jiwaji University, Gwalior will not hold any risk and responsibility for non-visibility of scanned document or non receipt of hardcopies or loss in transit.
2. The Documents that are received in time will only be considered for Technical Bid Evaluation.
3. The tenderer will be disqualified at any stage of the tender process, if found to have mislead or furnished false information in the forms/Statement/Certificate submitted in proof of 1 to 5 above.
4. The Registrar, Jiwaji University, Gwalior does not bind himself to accept the lowest or any tender and he reserve the right to reject any offer without assigning any reason.

Annexure - 04

Address where the equipment to be installed

Jiwaji University

Gwalior -474011 (M.P.)

ANNEXURE – 06

'INSTRUCTIONS TO BIDDERS'

Downloading of Tender Documents : 10.11..2020 (05:00 PM)

e-Bid Submission Closing Date : 12.11.2020 (05:00 PM)

Submission of EMD, Tender Fee; other : 15.11.2020 (05:00 PM) by Speed / Regd Post

Document etc :

Date of Opening of Technical Bids : 19.11.2020 (12:00 noon)

The Instructions given below must be read very carefully, as failure in compliance with any of these may render the offer liable for rejection. If a bidder has any doubt about the meaning of any stipulation herein, General Purchase Condition, specification of *materials or any otherenclosed* document, he should immediately obtain the clarification/information in writing.

1. Ernest money Deposit (EMD)

1/1. Offers must accompany online EMD submission slip (www.mptenders.gov.in) drawn- in favour of "Registrar Jiwaji University, Gwalior", .

The EMD shall be forfeited, if:

i) Bidder withdraws the bid before expiry of its validity.

ii) Successful bidder does not accept the order or fails to enter into a contract within validity period of offer.

iii) Successful bidder fails to furnish Security Deposit within one month of intimation/ date of issue of PurchaseOrder.

1/3. The EMD of unsuccessful bidders shall be returned as soon as the tenders are finalized.

2. **Acceptance of University Payment Terms**

The Standard Payment terms shall be –

100% of all inclusive price of the materials will be paid on receipt and acceptance of the material in good condition, installation and commissioning of the equipment supplied at site (LC will be opened in case of imported equipments if quoted in foreign exchange) and after furnishing of Bank Guarantee / FDR for 10% of the contract covering the guarantee period subject to penal provisions applicable in case of delay in supply and commissioning as per the condition 2.4 of Annexure – 07.

3. **Price Basis** :

The prices quoted shall be on FOR destination basis as per annexure-04and also shall include :

(a) Transit Insurance :

(b) All Taxes, Duties and Levies.

4. **Cost compensation for Deviation** :

Deviations specifically declared by the bidders in respective Deviation Schedules of Bid Proposal Sheets only will be taken into account for the purpose of evaluation . The bidders are required to declare the prices for the withdrawal of the deviations declared by them in the Deviation Schedules.

Offers should strictly be in conformity with specifications / drawings/samples as stipulated in the enquiry. In case no deviations are indicated, it shall be taken for granted that item(s) has/have been offered strictly as per the requirements given in the enquiry.

5.0 **Delivery** :

5.1 Delivery Schedule :

The Supply, Installation, and Commissioning of the material: The bidder shall offer his best, realistic and firm delivery, which shall be specific and guaranteed. Delivery period shall be reckoned from the date of P.O. which is the first intimation of acceptance of bidder's offer. Final date of delivery shall be evidenced by date of dispatch of materials as per transporter's Lorry Receipt/Goods Receipt/RR/PWB/AWB. For delivery beyond contractual delivery period, provisions of 'General Purchase, conditions' shall apply.

5.2 **Early Delivery** :

It shall be noted that if an order is placed on higher bidder, in preference to lowest acceptable offer, in consideration of an earlier delivery, the bidder shall be liable to the University, the difference between the ordered rate(s) and the rate(s) quoted by the lowest acceptable bid in case the tenderer fails to complete the supply in terms of such order within the date(s) of delivery specified in the tender and incorporated in the order. This is without prejudice to other rights of the University under terms of order.

6. It is not binding on University to accept the lowest or any bid. The University reserves the right to place orders for individual items with different bidders and to revise the quantities at the time of placing the order and in such event also, the quoted rates, terms and conditions shall apply. The order for the materials may also be split up between different bidders to facilitate quick delivery of critically required materials. University further reserves the right to accept or reject any/all bids without assigning any reason thereof. Final decision on bids also depends on the components/accessories/additional features offered.

7. The University at its sole discretion unilaterally may change the quantities to the extent of ± 30% as indicated in tender enquiry. The successful bidder shall be bound to supply these quantities at the same rate and on the same terms and conditions.

8. Tenderers shall fill in the enclosed Performa with regard to deviations /variations (Annexure -08) and submit the same along with their offer.

9. Orders placed against this tender enquiry shall be subject to 'General Purchase Conditions of University, copy of which is enclosed.Bidders are requested to confirm acceptance of these conditions into in their offer.

10. Make/Brand of items offered shall be specified failing which offers are liable to be rejected. It shall be appreciated if one copy of detailed descriptive literature/ pamphlets is enclosed along with the offer which may help technical evaluation. In a case material offered is ISI Marked /tested at any Govt. Recognized test house; copies of relevant certificates shall be furnished along with the offer.

ANNEXURE -07

GENERAL PURCHASE CONDITIONS

SECTION –I

GENERAL

1.1 The following terms and expressions used herein shall have the meaning as indicated therein Supplier / Vendors; shall mean the individual firm or company whether incorporated or otherwise in whose name the purchase order is addressed and shall include its permitted assignees and successors. Purchaser shall mean Registrar Jiwaji University, Gwalior – 474011.

1.2 **Reference :**
The purchase order number must appear on all the correspondence, packing slips, invoices, drawing or any other document or paper connected with the purchase order:

1.3 **Waiver :**
Any waiver by the purchaser of the terms and conditions of the purchase order shall not constitute any right for subsequent waiver of any other terms or conditions.

1.4 **Sub-letting and Assignment :**
The supplier shall not, save with prior consent in writing of the University/ sublet, transfer or assign this order or any part thereof or interest therein or benefit or advantage, thereof in any manner, whatsoever provided nevertheless that any such consent shall not relieve the supplier from any obligation, duty or responsibilities under the contract.

1.5 **Information provided by the University** :
All drawings, data and documentation that are given to the supplier by the University for the Execution of the order are the property of the University and shall be returned when demanded. Except for the purpose of executing the order of the University, the supplier shall ensure that the above documents are not used for any other purpose. The supplier shall further ensure that the information given by the University is not disclosed to any person, firm body, corporate and/or authority and make every effort to keep the above information strictly confidential. All such information shall remain the absolute property of the University.

1.6 **Supplier Liability** :
Supplier hereby accepts full responsibility and indemnifies the University and shall hold the University harmless from all acts of omission and commission on the part of the supplier, his agents, his subcontractors and employees in execution of the purchase order. The supplier also agrees to defend and hereby undertakes to indemnify the University and also hold it harmless from any and all claims for injury to or death of any and all persons including but not limited to his/her employees and for damage to the property arising out of or in connection with the performance of the work under the purchase order.

1.7 Access to supplier's premises :
The University and/or its authorized representative shall be provided access to the supplier's and/or his sub-contractor's premises, at any time during the pendency of the purchase order, for expediting the supplies, inspection, checking etc.

1.8 Modifications :

The purchase order constitutes an entire agreement between the parties hereto. Any modification to this order shall become binding only upon the same being confirmed in writing duly signed by both the parties.

1.9 **Inspection/Checking/Testing :**

All materials/ equipment to be supplied against this purchase order shall be subject to inspection/ checking /testing by the University or its authorized representative at all stages and places, before, during and after the manufacture. All these tests shall be carried out in the presence of authorize representative of the University. Supplier shall notify the University for inspection of materials/equipment when they are ready, giving at least 10 days notice. If upon receipt at our Stores, the material/equipment does not meet the specifications, they shall be rejected and returned to the supplier for repair/modification etc. or for replacement. In such cases all expenses including to-and-fro freight, re-packing charges, transit insurance etc shall be to the account of supplier.

Inspection by the authorized representative of the University or failure of the University to inspect the material/equipment shall not relieve the supplier of any responsibility or liability under this purchase order in respect of such material/ equipment and it shall not be interpreted in any way to imply acceptance thereof by the University. Whenever specifically asked for by the University, the supplier shall arrange for inspection/ testing by Institutional Agencies such as Lloyds Register of Industrial Services, Boiler Inspectorate, RITES. In such cases supplier shall adhere to the inspection/ testing procedures laid down by such agencies. All expenses in this regard including inspection fees shall be to the suppliers account unless agreed to the contrary and specified in the purchase order.

1.10 **Packing and Marking** :

All materials/equipment shall be securely packed to the requirements of transportation by Air/Rail/Road/Sea. All exposed services/ connections/, protrusions shall be properly protected. All unexposed part shall be

packed with due care and the packages should bear the words 'handle with care'. The packing requirements of Air/Rail/Road transport shall be complied with so as to obtain clear Airway/Railway Receipt/Lorry Receipt i.e. without any qualifying remarks.

All packages and unpacked materials shall be marked with the name of Consignor, Consignee, purchase order No., gross and Net weight, sign of handling, if any, with indelible paint in English at least at two places. In case of bundles, metallic plates marked with the above details shall be tagged to such bundles.

1.11 **Dispatch of Materials**:

The supplier is responsible for the safe delivery of the goods in good condition at destination stores. The supplier should acquaint himself of the conditions relating to handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.

1.12 **Validity of offers**:

The offers shall be valid for a period of 120 days (Depending on the type of equipment) from the date of opening of bids. The period of validity cannot be counted from any other date other than the date of opening the bids. During this period the tenderer shall not be

permitted to withdraw or vary his offer made and if the tenderer does so, the EMD shall be forfeited.

1.13 **Jurisdiction**:
All and any disputes or difference arising out of or touching this order shall be decided only by the Courts or Tribunals situated in Gwalior.

1.14 The Registrar, Jiwaji University, Gwalior does not bind himself to accept the lowest or any tender and he reserves the right to reject any offer without assigning any reason.

SECTION-II
FINANCIAL

2.1 **Prices**:

Prices quoted shall be inclusive of all taxes and firm till completion of the programme.

2.2 **Terms of payment**:

2.2.1. Payments by the purchaser shall be made through Account payee cheques only. **Bank charges if any shall be borne by the supplier. In case of imported equipments LC will be opened.**

2.2.2 If the supplier has received any overpayments by mistake or if any amounts are due to the University from the supplier due to any other reasons and when it is not possible to recover such amount under the present purchase order, the University reserves the right to collect the same from any other amounts and/ or Bank Guarantee given by the supplier due to or with the University.

2.3 **Liquidated Damages/ Failure and Termination**:

2.3.1 In the event of any delay in the supply of material beyond the stipulated date of completion including any extension permitted in writing, the University reserves the right to recover from the supplier a sum equivalent to 0.5% of the value of delayed materials/ equipment for each week of delay and part thereof subject to a maximum of 5% of the total value of the order.

2.3.2 Alternatively, the University reserves the right to give the contract else where at the sole risk and cost of the supplier and recover all such extra cost incurred by the University in procuring the materials from the other source.

2.3.3 Alternatively University may cancel the Purchase Order completely or partly without prejudice to its right under the alternatives mentioned above.

2.3.4 In case of recourse to alternative 2.3.2 and 2.3.3. above, the University shall have the right to repurchase the materials which is readily available in the market to meet the urgency requirements caused by supplier's failure to comply with the scheduled delivery period irrespective of the fact whether the material/ equipment is similar or not.

2.4 **Delivery Schedule**:

Time is essence of this order and no delay shall be allowed in the delivery time/ delivery schedule mentioned in the purchase order.\

2.5 **Performance Bank Guarantee**:

The supplier shall ensure that all materials/equipment under this purchase order shall conform to University's requirements and specifications. An additional security in the form of Performance Bank Guarantee / FDR is essential for satisfactory performance of the equipment over a period of time. In view of this, the supplier shall be required to furnish a Bank Guarantee / FDR (10% of order value) as follows against any manufacturing defects/ poor workmanship/poor performance. In case any deficiencies are found during this period, the same shall be repaired/rectified/replaced free of cost. BG / FDR shall be from any Scheduled Bank or any other bank as approved by University from time to time in the prescribed performa.

a. Bank Guarantee / FDR for 10% of the order value with validity up to warranty period from the date of installation of equipment.

The University shall at its discretion have recourse to the said bank guarantee / FDR for recovery of any or all amount due from, the supplier in connection with the purchase order including of guarantee obligations. Checking/approval of supplier's drawings, inspection and acceptance of materials/equipment furnishing to effect shipment and/or work done by erection, installation and commissioning of the equipment by University or any other agency on behalf of the University shall not in way relieve the supplier from the responsibility for proper performance during the guarantee period.

2.6 **Insurance**:

Supplier shall arrange suitable insurance cover at his risk and cost.

2.7 **Removal of rejected goods and Replacement**:

a) If upon delivery, the material/equipment is found not in conformity with the specifications stipulated in the purchase order, whether inspected and approved earlier, or otherwise, such material/ equipment will be rejected by the University or his authorized representative. A notice to this effect shall be issued to the supplier, normally within 30 days from the date of receipt of materials at our Stores.

b) Supplier shall arrange suitable replacement supplies and remove the rejected goods within 30 days from the date of notice failing which, the goods shall be dispatched to, vendor by road transport on 'Freight to pay basis at supplier's risk and cost.

c) External damages or shortages that are prima-facie as a result of rough handling in transit or due to defective packing shall be intimated to the supplier within, a period of one month of the receipt of the materials, spares etc. In case of Internal defects, damages of shortages of any internal part, which cannot ordinarily be detected on a superficial visual examination, due to bad handling in transit of defective packing or any other reason, it should be intimated to the supplier within 3 months from the date of receipt of the material. In either case the damaged or defective material should be replaced by the supplier free of costs.

d) If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the University may deem proper to afford, the University may without prejudice to its other rights and remedies arrange for repairs/rectification of the defective materials or replace them entirely and recover the expenditure incurred on account of these actions from the deposits such as EMD,SD and performance guarantees or other monies available with the University or by resorting to legal action.

2.8 **Force Majeure** :-

2.8.1 The supplier shall not be liable for delay or failing to supply the material for reasons of Force Majeure such as Act of God, Act of War, Act of Public Enemy, Natural Calamities, fires, Floods, Frost, Strikes. Lockouts etc. Only those causes which have duration of more than 7 days shall be considered for force Majeure.

2.8.2 The Supplier shall within 10 days from the beginning of such delay notify the University in writing the cause of delay. The University shall verify the facts and grant such extension of time as facts justify.

2.8.3 No price variation shall be allowed during the period of force majeure and liquidated damages would not be levied for this period.

2.8.4 At the option; of University, the order may be cancelled. Such cancellation, would be without any liability whatsoever on the part of the University. In the event of such cancellation, supplier shall refund any amount advanced or paid to him by the University and deliver back any materials issued to him by the University and release facilities, if any, provided by the University.

ANNEXURE -08

DEVIATIONS

Bidder's Name and Address :_____

_____

To

The Registrar,

Jiwaji University

GWALIOR – 474011 (M.P.)

Dear Sir,

Sub :- Suplply of _____ against enquiry No. _____ Dated _____.

We confirm that following are the only deviations and variations, from any exception to specifications and tender documents for the above mentioned subject supplies against enquiry offer. These deviations and variations are exhaustive. Except for these deviations, the entire supplies shall be executed as per specifications and tender documents. Further, we agree those additional conditions, if any, found in our offer other than those stated below, save that pertaining to any rebates offered shall not be given effect to.

Sl.No.	Description of Deviation Conditions of	Ref. of Page, Clause	*Monetary,Implications of the bid-documents in case of withdrawal Rs. (in figures) Rs. (Inwords)

Note : Here the tenderer should indicate the amount of money, if any, which conditions/deviations and accepting the condition as stipulated in tender documents (Use additional Sheet of the same size and format if necessary).

Signature : _____

Designation :_____

ANNEXURE -09

Guide-lines for Submission of Bank Guarantee towards Performance Security

The Bank Guarantee shall fulfill the following conditions failing which it shall not be considered valid:

1. Bank Guarantee shall be executed on non-judicial stamp paper of applicable value purchased in the name of bank.
2. Non-judicial stamp paper shall be used within 6 months from the date of purchase. Bank Guarantee executed on the stamp paper of more than 6 months old shall be treated as invalid.
3. The contents of the Bank Guarantee shall be as perourper form (Annexure -10)
4. The Bank Guarantee should be executed by a scheduled bank or banks viz. _____ _____ _____ _____
5. The executor of Bank Guarantee (Bank Authority) should mention the Power of Attorney No. and Date executed in his/her favour authorizing him/her to sign the document or produce the Photostat copy of Power of Attorney.
6. All conditions, corrections, deletion in the Bank Guarantee should be authenticated by signature of Bank Officials signing the Bank Guarantee.
7. Each page of Bank Guarantee shall bear signature and seal of the Bank.
8. Two persons should sign as witnesses mentioning their full name and address.

Registrar,
Jiwaji University,
Gwalior -474011 M.P.

ANNEXURE -10

BANK GUARANTEE ROFORMA FOR PERFORMANCE SECURITY

This agreement has to be executed on a Non-Judicial Stamped Paper worth Rs. 100/-(Rs. One Hundred)

Whereas the _____ here-in-after called (The Bidder) has submitted their bid dated_____for the supply of_____(Here-in-after called "the Bid")_____ KNOW ALL MEN by these presents that we_____(Hereinafter called the Bank") are bound unto Registrar, Jiwaji University, Gwalior, M.P. Hereinafter called "the purchaser") in the sum of _____ for which payment will and truly to be made to the said purchaser, the bank binds itself, its successors and assigns by these presents. Sealed with the common Seal of the said Bank this_____day of_____2020'

THE CONDITIONS OF THIS OBLIGATION ARE:

1. When the successful tenderer does not accept the order after issue of preliminary acceptance letter/letter of indent/purchase order.
2. When the successful tenderer fails to furnish the security deposit within 30 days from the date of issue of preliminary acceptance letter or the letter of indent or purchase order _____.
3. When tenderer is disqualified for reasons outlined in_____.
4. When tenderer alters his prices or withdraws his offer during the validity period. We undertake to pay to the purchaser the above amount within one week upon receipt of its first written demand without the purchaser having to substantiate his demand, without referring to the supplier and without questioning the right of University to make such demand or the propriety or legality of the demand provided that in its demand the purchaser will note that the amount claimed by it is due to it owing to any of the occurrence of the above mentioned conditions, specifying the occurred condition or conditions.

Notwithstanding any thing contained in the foregoing our liability under this guarantee is restricted to_____(Rupees_____ only). Our guarantee shall remain in force until_____. Unless a claim within 3 months from that date, all your rights under this guarantee shall be forfeited and we shall be relieved and discharged from all liability thereafter.

We_____Bank Limited lastly undertake not to revoke this guarantee during its currency except with the previous consent of University in writing.

Date the_____Day_____200 for_____Bank Ltd.

ANNEXURE-11

TECHNICAL BID FORM

S.No.	Documents	Copy submitted or no (Yes/No)
1	The Company/the tenderer should be in existence for the last 5 years As per Annexure-02	
2	The tenderer should be a Manufacturer or the authorized representative of equipment or other respective products/items	
3	IT returns for the last three financial years.2016-2017 ,2017-2018 ,2018-2019.	
4	Technical Specifications of Annexure- 05 (Complied or Not-Complied report) along with supporting documents of the items bided (items 1 to 21), for the scientific equipments clearly mentioning the make and model	
5	List mentioning the addresses and contact persons with phone numbers of the Service Centers	
6	The list of customers, to whom the bidder had supplied identical materials in the past	
7	Annexure-08	

ANNEXURE – 5

1. TECHNICAL SPECIFICATIONS FOR SINGLE CRYSTAL X-RAY DIFRACTOMETER SYSTEM

S. No.	Items	Specifications
1	Mounting and Cooling Facility:	(a) Floor mounted system for dedicated use in a laboratory. b) The X-ray diffractometer system should overall be air-cooled without any need for external water chillers.
2	Sample and Detector Positioning System:	(a) The instrument should include a fully automated high precision 4-circle kappa goniometer with all axes and detector distance controlled through the system computer. (b) The sample to the detector distance should be variable over a range of at least 40-145 mm or higher.It should have very high angular precision and high angular coverage of minimum 150 deg. 2 Theta. (c) The XRD system must be equipped with sample-detector distance detection system in real mode. The goniometer's sphere of confusion should be less than 7 microns and must not be greater than 20 microns even when the detector is at its farthest distance.
3.	X-ray Source:	(a) Dual Mo and Cu Kα micro-focus X-ray source, pre-aligned, maintenance free and designed for continuous operation together with sealed micro focus X-ray generator with all essential and latest generation high performance optics as well as X-ray source (PhotonJet,IμS 3.0 or better) for the computer controlled data collection of highest standards so that data can be collected by using the both molybdenum and copper radiation without the need for replacing the X-ray tube as well as without modifying the optics. The switching over from one radiation source to another should be user friendly, instantaneous and controlled through computer with fast interchange of system settings. (b) The X-ray source(s) must be completely air cooled to provide the highest stability in beam position and beam intensity. The micro-focus source should have good power output of 50 W or better, and the beam diameter at the crystal should be optimum through use of suitable pinholes / collimators. The X-ray source should comply with statutory safety regulations. Fully X-ray protected enclosure as per international safety norms. Manufacturer of the micro-focus source must be mentioned. The X-ray source should be covered by minimum 5 years replacement warranty from the date of installation.
4.	X-ray Detector:	(a) State-of-the-art detector suitable for both Mo and Cu radiation with highest sensitivity and latest technology. Detector should be based on Charge Integrating Pixel Array Detector (CPAD) / Hybrid Pixel Array(HPAD) /Hybrid Photon Counting(HPC) or better technology with no dead area for detecting the diffracted X-rays and accurately measuring their intensities from the diffraction pattern of single crystals. (b). The detector should be able to capture very weak as well as very strong reflections on a single frame with minimum global counts of at

		least 200,000 cps or better. The detector should have high signal to noise ratio with virtually noise free readout electronics and should be capable of shutter-less operation with auto air cooled facility. Vendor must specify the dark current and noise of the Detector Chip. Resolution of the detector should be 135 microns or better. The size of detector should be minimum 77 mm x 38 mm area or larger. Detector should carry a warranty of 5 years from the date of installation.
5.	Computer and Printer:	The Diffractometer Instrument should come with a PC with Factory loaded Software. Specifications of the PCs should be the following or better: Licensed Windows 10 operating system, Intel i5 CPU, 1.7 GHz or better, 8 GB RAM, 64bit Operating System, 1 TB HDD or better / higher. Intel Mother board, graphics card, 16X DVD RW. Latest LCD monitor > 22 inch. 2 TB external hard drive, colour laser Printer.
6	Application Software:	(a) The software suite provided with the system shall consist of a complete suite of well tested and user proven routines for the collection and integration of frame data on single crystals and for solving, refining, and displaying single crystal structures. (b) Software shall allow remote access to the instrument including diffractometer, goniometer, and X-ray generator functions to setup the experiment, view data as collected, process the data, solve and refine the structures remotely or off-line. (c) Software for auto structure solution, twins, low/high temperature, high pressure, charged density and modulated structure should be included. (d) An unlimited number of data integration and analysis software licenses should be available so that all local and remote dependents of the equipment should have the capability to analyze the data independently. (e) Manufacturer must offer their latest version of licensed software developed by them. No public domain software is acceptable. There must be an undertaking that updates to the instrument control/data collection and automated structure solution and refinement software will be provided as available free of charge and in perpetuity. (f) For data collection strategies, the software shall have predefined runs including Sphere, Hemisphere and Quadrant. Optimized runs shall provide for completeness / coverage as well as the facility for user defined runs. Software shall allow easy change of exposure time, scan ranges, scan width and detector distance and provide automatic re-measurement of overflow frames, automatic dark image acquisition and optional reference frames for tracking decaying samples. (g) The offered data acquisition software package must be compatible with SHELX, WINGX and OLEX2. (h). Software for Auto Structure solution should be quoted along with basic scope. (i) Most recent and advanced software for data analysis are required. Atleast 10 licenses within the campus for data analysis should be provided.
7.	Cooling Facility:	The X-ray diffractometer should be supplied with a sample cooling device that allows the control of the sample environment from 80-400K (Preferably Oxford 800 series) with an error not larger than

		±0.1K over the whole temperature range. A liquid nitrogen storage tank for 150 or more litres with auto refill accessory and necessary valves, regulators, transfer line and other accessories should be included.
8.	Sample Temperature:	The sample temperature should be set and varied in a stepwise fashion by the instrument control software to allow for easily creating variable temperature measurements.
9.	Video Microscope & Illumination:	The system must include a colour video microscope which records colour images of the crystal mounted on the goniometer platform to assist alignment, monitoring, and face-absorption corrections. In addition, provision should be available to transfer and store images.
10.	Consumables:	Following Consumables should be supplied along with the system: i. Mounted cryo-loops of different sizes (0.1-0.2,0.2- 0.3, 0.3-0.4, 0.4-0.5, 0.5-0.6, 0.6 – 0.7 mm-25 each) for cryo-mounting. ii. Lindeman capillaries made of special glass with outer diameter of 0.2mm, 0.3mm, 0.5 mm -25 pcs of each type. iii. Five (5) Nos. of Goniometer head in the basic system. iv. Paraton N or equivalent Cryo mounting oil – 5 nos. v. Capillary Sealants: Duco Cement 29 ml x 5 nos. vi. Red sticky wax 2 box vii. Calibrating YLID Standard Crystal on Goniometer head – 1 no. viii. Super Glue 4 g tube- 5 nos. ix. Magnetic Base to mount on XYZ-Goniometer head. 49/64 mm – 10 no. x. MiTeGenmicromeshes 400/25- 10 no.
11.	UPS System:	A suitable Branded UPS for back up complete system and accessories including Low Temperature attachment for uninterrupted data collection for minimum one hour back-up should be quoted.
12	Microscope for Sample Selection	A stereo-zoom optical microscope with polarizer for crystal mounting.
13.	Manuals / Circuit-Diagrams and Instruction Sheets:	All the manuals and instruction sheets must be supplied in English for the purpose of service engineer's reference. The offered SCXRD system model should preferably comply with the latest machinery directive, for electrical equipment and electromagnetic compatibility under fully CE compliant guidelines (or equivalent).
14.	Spares:	One (1) No. of additional Mo X-ray micro focus tube, one (1) additional beam stopper and one (1) additional test crystal for calibration. Other spares as per standard practice should be provided. The detail list of spare to be enclosed with the offer for evaluation purpose. Supplier should confirm the availability of spares for next 10 years from the date of installation.
15.	Service Facility and Down-time Call Attendance:	Supplier should clearly mention about their service set up in India (preferably in Northern part of India for prompt service support. The manufacturer and/or their Indian representative must have at least three qualified and factory trained service engineer in India to be able to attend to service at Jiwaji University Gwalior within 48 hours on submitting a complaint. Training certificates from the manufacturer have to be provided with the tender. During the warranty period, only

		factory trained and certified engineers are acceptable to attend the service. In case the equipment/system remains non-operational for more than 5 days then warranty period will be extended for the equivalent period for which equipment/system remained non-operational. Warranty extension in such case shall be done without prejudice to any other term & condition of the contract. JU Gwalior would like to enter in service agreement through which JU Gwalior will receive replacement of defective spares/part (if any, that are not covered under warranty) immediately so as to minimize the down time. Order, if any, required to be placed for such spares/parts will be done by JU Gwalior in due course of time.
16.	Qualification Criteria of the Instrument:	The data collected in the offered XRD system must be publishable as per the Acta Crystallographica guideline. This is applicable for both Mo and Cu radiation.
17.	Pre-Installation Requirement:	Necessary pre-installation advice should be sent immediately after the placement of the order.
18.	Installation, Commissioning and Application Training:	Free of cost at site for 10 working days for a group of technical staff/students for operating the instrument to complete structure determination/solution. There will be minimum two basic pieces of training namely installation training and after few months advanced application training. Apart from these two, there will be application training every six months on mutually convenient dates. The application training must be provided by the application scientist having expertise on the X-ray Crystallography.
19.	Warranty:	The single crystal X-ray diffractometer system including X-ray tube, detector, cryo-system, and UPS quoted for it should be under on site comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part i.e. valves washers, gaskets, anything which does not get consumed with sample preparation or running. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation
20.	Extended Warranty	After the completion of 3 years OEM warranty, two years extended CMC must be quoted with out which the tender will be rejected
21.	Installation in India and Abroad:	Detailed lists of users in India with contact details for the quoted equipment. Preferably, there should be at least one same quoted equipment installed/ordered in India in last 5 years. If required JU Gwalior team will visit the installation site.
22.	Performance	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
23.	Validity of Quotation:	Minimum 3 months.
24.	Submission of Bids:	Tender should be submitted in two parts – technical and financial

2. Technical Specification for Benchtop NMR Spectrometer

Items	Specification
1. Instrument Type	It should be Pulsed Fourier Transform NMR Spectrometer
2. Sample Presentation	Standard5mmod,178mm(7")longNMR tubes
3. Magnet Type	Permanent, Cryogen-Free, should provide frequency to entire sample without tube movement.
4. Field Strength	2 Tesla Magnet
5. Magnet Temperature Control	It should have Active Heating and Active Cooling
6. Operating frequency	It should have 80 MHz
7. Probe	It should have Single Probe for 1H, 19F, 13C
8. Spectral Resolution	
^{1}H 50% Linewidth:	<0.4Hz (Instrument software Shim test report should be submitted along with 10% H2O in D2O or shim standard peak with resolution at 1H 50% Linewidth
^{1}H 0.55% Linewidth:	<17Hz (Instrument software Shim test report should be submitted along with 10% H2O in D2O or shim standard peak with resolution at 1H 50% Linewidth <0.5 Hz and at 1H 0.55% Linewidth <17 Hz)
9. Signal:Noise	It should offer >230:1 for 1% Ethyl Benzene, Measured in a single scan on the quartet of the CH2 group. (Spectra of with sensitivity >230:1 should be submitted as a proof)
10. LockType	External Hardware Lock should be Independent of the sample and No Deuterated solvent should be required
11. ProbeTuneandMatch	Should be Preset, nouserintervention required
12. Shimming	Shimming should be fully automated. Shimming for each sample should not be required.
	No sample spinning should be required
13. Experimental Protocols	It should perform following protocols with ease for all nuclei H, F and C 1- D (H, F, and C), 1-D Paramagnetic, 2-D COSY (Correlation Spectroscopy), 2-D TCOSY (Total Correlation Spectroscopy), 2-D JRES (Homonuclear J-Resolved Spectroscopy), Relaxation T1 and T2, Proton Pulse-Decoupled, DEPT (Distortionless Enhancement by Polarization Transfer), APT (Attached Proton Test): Solvent suppression facility; HETCOR (Heteronuclear Correlation Spectroscopy), HMBC (Heteronuclear Multiple Bond Correlation), HMQC (Heteronuclear Multiple-Quantum Correlation), HSQC (heteronuclear single quantum correlation) HSQC-ME (multiplicity-edited HSQC)

14.Service required:	No cryogenic liquids required No compressed air required No water cooling required No gases required
15.Operating temperature	18° C to 28° C
16.Software	Most recent and advanced Software with permanent license should be offered along with system.
17.Consumables	Following consumables should be supplied along with the system: 1. NMR tubes 5 mm no.# 200 2. Two bottles of $CDCl_3$ 100 mL each.
18.UPS System:	A suitable Branded UPS for back up complete system and accessories for uninterrupted data collection for minimum one hour back-up should be quoted.
19.Manuals / Circuit-Diagrams and Instruction Sheets:	All the manuals and instruction sheets must be supplied in English for the purpose of service engineer's reference. The offered benchtop NMR system model should preferably comply with the latest machinery directive, for electrical equipment and electromagnetic compatibility under fully CE compliant guidelines (or equivalent).
20.Service Facility and Down-time Call Attendance:	Supplier should clearly mention about their service set up in India (preferably in Northern part of India for prompt service support. The manufacturer and/or their Indian representative must have at least three qualified and factory trained service engineer in India to be able to attend to service at Jiwaji University Gwalior within 48 hours on submitting a complaint. Training certificates from the manufacturer have to be provided with the tender. During the warranty period, only factory trained and certified engineers are acceptable to attend the service. In case the equipment/system remains non-operational for more than 5 days then warranty period will be extended for the equivalent period for which equipment/system remained non-operational. Warranty extension in such case shall be done without prejudice to any other term & condition of the contract. JU Gwalior would like to enter in service agreement through which JU Gwalior will receive replacement of defective spares/part (if any, that are not covered under warranty) immediately so as to minimize the down time. Order, if any, required to be placed for such spares/parts will be done by JU Gwalior in due course of time.
21.Installation, Commissioning and Application Training:	Free of cost at site for 5 working days for a group of technical staff/students for operating the instrument to complete structure determination/solution. There will be minimum two basic pieces of training namely installation training and after few months advanced application training. Apart from these two, there will be application training every six months on mutually convenient dates. The application training must be provided by the application scientist having expertise in NMR Spectroscopy.

22. Warranty:	The benchtop NMR spectrometer system and UPS quoted for it should be under on site comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part, anything which does not get consumed with sample preparation or running. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
23. Extended Warranty	After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer.
24.Installation in India	Detailed lists of users in India with contact details for the quoted equipment. Preferably, there should be at least one same quoted equipment installed/ordered in India in last 5 years. If required JU Gwalior team will visit the installation site.
25.Performance	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
26.Validity of Quotation:	Minimum 3 months.
27.Submission of Bids:	Tender should be submitted in two parts – technical and financial

1. **Technical Specifications for High Performance Computing (HPC) Cluster**

Site preparation, supply, installation and commissioning of HPC for JIWAJI UNIVERSITY GWALIOR for 540 CPU Cores and 44TF (Peak) or higher based Computational Facility with the following technical specifications.

1. Master Node

Quantity		**1 unit**
Sr. No.	**Specification**	**Description**
1.	Processor	Latest generation 2xCPU (x86 Architecture scalable CPU) each with minimum 28 Cores or higher/latest with minimum frequency of 2.9GHz or more. Must have Native support of AVX2 instruction, And peak performance@1.46 TF/Socket or more. The socket to communication should be atleast 3 x 16 GT/s.
2.	Memory	RAM: 128GB ECC DDR4-3200 MHz or better RAM. At least 12 DIMMs available in total. In 100% balanced Configuration.
3.	Hard Disk Drives & SSDs	2TB SAS×6 Numbers SPEED = 7.2K rpm TYPE = SAS 2 x 480GB SATA Enterprise GRADE SSD (3 DWPD)
4.	HDD bays	HDD bays supporting 8 or more SAS/SATA Hard drives and Solid State Drives. On board NVMe controller and at least 2 dedicated NVMe drive bays or more out of total bays available .
5.	I/O slots (*Peripheral Component Interconnect Express,**PCIe**)*	Minimum 4 × PCIe 3.0 slots must be vacant after populating all Add on controllers.
6.	RAID Level support	SAS 12GBPS controller with provision to support up to 40+ HDDs , and supports RAID 0, 1, 10, 5 ,50 ,60 & 6 with dedicated cache memory. RAID card must support all HDD bays w/o any additional item to be added. with supported backplane for drive bays and JBOD. System must provide array configuration and management utilities, Independent of port auto-negotiation, optional battery back up unit for future upgrade. Must Support SSP, SMP, STP protocols or more
7.	Graphics controller	Integrated Graphics with on board controller.
8.	Network interface	At least 2 number of Gigabit ports on board.
9.	Ethernet ports	2×1 GBPS Ethernet ports with Preboot Execution Environment (**PXE**) boot capability (including CAT6 cable for connecting to switch)
10.	Ports	Minimum 2 USB 3.0 or higher and 1 graphics port
11.	Cluster Interconnect	56 GBPS (or higher) Infiniband OR INTEL OPA Single Port with cable (same make as the IB switch OR OPA SWITCH).
12.	Chipset	Intel C620 SERIES CHIPSET or equivalent AMD SOC or higher/latest
13.	Server management(Intelli-gent Platform Management, Interface, **IPMI**)	IPMI 2.0 Support with KVM and Media over LAN features. Must include any licenses, if required for using these features. It should be able to automate mgmt. tasks and automated firmware updates.
14.	Power supplies	Dual Redundant (N+1) 80 Plus Platinum or better Certified efficient power supplies
15.	Cooling	Optimum no. of Cooling fans.
16.	Operating System	Should support latest version of 64-bit CentOS or better for server / HPC

17.	Warranty	❖ The instrument including UPS (if any) quoted for it should be under on-site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on-site, the manufacturer must confirm this in their quotation. ❖ Comprehensive Maintenance Contract (CMC) : After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected, i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document. The comprehensive Warranty should cover: (1) All parts including accessories, spares and labour on-site. (2) Free maintenance and service on-site or at factory (if needed) with no cost, and (3) Regular free up-gradation of software if any. ❖ Physical on-site (JIWAJI UNIVERSITY GWALIOR) visit by technical experts of Bidder or OEM for maintenance and technical support whenever needed.
18.	Software Suites	NAMD, MATLAB,LAMMPS,NWCHEM, GROMACS and more research codes/ software suites to be loaded as part of installation process by bidder.
19.	Form Factor	Rack Mount up to 2U or lesser
20.	All required cables	

2. Compute Node

Quantity		**14 nodes**
Technical specifications of each computational nodes as below:		
Sr. No.	**Specification**	**Description**
1.	Processor	Latest generation 2xCPU (x86 Architecture scalable CPU) each with minimum 28 Cores or higher/latest with minimum frequency of 2.9GHz or more. Must have Native support of AVX2 instruction, And peak performance@1.46 TF/Socket or more. The socket to communication should be atleast 3 x 16 GT/s.
2.	Memory	RAM: 128GB ECC DDR4-3200 MHz or better RAM. At least 12 DIMMs available in total. In 100% balanced Configuration.
3.	Hard Disk Drives and SSDs	1 x 480GB SATA Enterprise GRADE SSD (3 DWPD Endurance)
4.	HDD bays	6 HDD bays supporting HDDs or SSDs.(Large Form Factor based drive bays)
5.	GPU Accelerator Support	None
6.	I/O slots (*Peripheral Component Interconnect Express, **PCIe**)*	Minimum 2 × PCIe 3.0 slots vacant after populating all Add on Cards
7.	RAID Level support	RAID 0,1,10 level supported with RAID controller
8.	Graphics controller	Integrated Graphics Controller
9.	Network interface	At least 2 number of Gigabit ports on board.
10.	Ethernet ports	2×1 GBPS Ethernet ports with pre-boot Execution Environment (**PXE**)

		boot capability (including CAT6 cable for connecting to switch)
11.	Ports	Minimum 2 or more USB 3.0 or higher/latest and one port for graphics.
12.	Cluster Interconnect	56 GBPS (or higher) Infiniband OR INTEL OPA Single Port with cable (same make as the IB switch OR OPA SWITCH).
13.	Chipset	Intel C620 SERIES CHIPSET or equivalent AMD SOC or higher/latest
14.	Server management (Intelligent Platform Management, Interface, **IPMI**)	❖ **IPMI 2.0 or equivalent Support with KVM and Media over LAN features. Must include any licenses, if required for using these features.** ❖ It should be able to automate mgmt. tasks and automated firmware updates.
15.	Power supplies	Dual Redundant N+1 or better 80 Plus platinum rated efficient power supplies. In case of Multi Node Sharing architecture shared power supplies is permitted redundancy at the level of Chassis/Cabinet is acceptable.
16.	Cooling	Optimum no. of Cooling fans.
17.	Operating System	Should support latest version of 64-bit CentOS or better for HPC
18.	Warranty	❖ The instrument including UPS (if any) quoted for it should be under on-site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on-site, the manufacturer must confirm this in their quotation. ❖ Comprehensive Maintenance Contract (CMC) : After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected, i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document. The comprehensive Warranty should cover: (1) All parts including accessories, spares and labour on-site. (2) Free maintenance and service on-site or at factory (if needed) with no cost, and (3) Regular free up-gradation of softwareif any. Physical on-site (JIWAJIUNIVERSITY GWALIOR) visit by technical experts of Bidder or OEM for maintenance and technical support whenever needed. ❖ Physical on-site (JIWAJI UNIVERSITY GWALIOR) visit by technical experts of Bidder or OEM for maintenance and technical support whenever needed.
19.	Software Suites	NAMD,MATLAB,LAMMPS,NWCHEM,GROMACS and more open source software suites to be loaded as part of installation process by bidder. No commercial Codes
20.	Form Factor	- 2U Rack Mount or lesser per node.
21.	All required cables	

3. Compute Node (CPU-GPU)

Quantity		**1 unit**
Technical specifications of each computational nodes as below:		
Sr. No.	**Specification**	**Description**
1.	Processor	Latest generation 2xCPU (x86 Architecture) each with minimum 28 Cores and minimum frequency of 2.9GHz., Must have Native support of AVX2 instruction. And Peak Performance@1.46 TF/Socket. The socket to communication should be atleast 3 x 16 GT/s
2.	Memory	RAM: 128GB ECC DDR4-3200 MHz or better RAM. At least 12 DIMMs available in total. In 100% balanced Configuration.
3.	Hard Disk Drives and SSDs	1 x 480GB SATA Enterprise GRADE SSD (3 DWPD Endurance)
4.	HDD bays	2 HDD bays supporting HDDs or SSDs.(Large or Small Form Factor based drive bays)
5.	GPU Accelerator Support	1 x Nvidia Tesla V100 32GB-PCIe or SXM2 (NVLink) based. System must be scalable to 3 GPUs per node from day one
6.	I/O slots (*Periperal Component Interconnect Express*, ***PCIe***)	Minimum 1 × PCIe 3.0 slots vacant available to populate add on cards after populating all 3 GPU cards
7.	RAID Level support	RAID 0,1,10 level supported with RAID controller
8.	**Graphics controller**	**Integrated Graphics Controller**
9.	Network interface	At least 2 number of Gigabit ports on board.
10.	Ethernet ports	2×1 GBPS Ethernet ports with Pre-boot Execution Environment (**PXE**) boot capability (including CAT6 cable for connecting to switch)
11.	Ports	Minimum 2 or more USB 3.0 or higher/latest and one port for graphics.
12.	Cluster Interconnect	56 GBPS (or higher) Infiniband OR INTEL OPA Single Port with cable (same make as the IB switch OR OPA SWITCH).
13.	Chipset	Intel C620 SERIES CHIPSET or equivalent AMD SOC or higher/latest
14.	Server management (Intelligent Platform Management, Interface, **IPMI**)	❖ IPMI 2.0 or equivalent Support with KVM and Media over LAN features. Must include any licenses, if required for using these features. ❖ It should be able to automate mgmt. tasks and automated firmware updates.
15.	Power supplies	Dual Redundant N+1 or better 80 Plus platinum rated efficient power supplies.
16.	Cooling	Optimum no. of Cooling fans.
17.	Operating System	Should support latest version of 64-bit CentOS
18.	Warranty	❖ The instrument including UPS quoted for it should be under on-site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on-site, the manufacturer must confirm this in their quotation. ❖ Comprehensive Maintenance Contract (CMC) : After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected, i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document.

		The comprehensive Warranty should cover: (1) All parts including accessories, spares and labour on-site. (2) Free maintenance and service on-site or at factory (if needed) with no cost, and (3) Regular free up-gradation of software if any. ❖ Physical on-site (JIWAJI UNIVERSITY GWALIOR) visit by technical experts of Bidder or OEM for maintenance and technical support whenever needed.
19.	Software Suites	NAMD, MATLAB, LAMMPS, NWCHEM, GROMACS and more open source software suites to be loaded as part of installation process by bidder. No commercial Codes**. Commercial codes if any will be provided by the user but loaded as part of installation process by bidder.**
20.	Form Factor	2U Rack Mount or lesser. Multi Node systems not allowed for GPU nodes
21.	All required cables and connectors, etc.	

4. PFS Storage System Qty -1 Set (Comprising of at least 2 x IO Nodes)

S.No.	Description
1.	Parallel File System
	Technical Specification
	Luster based PFS with following specification :-
	Metadata Storage: more than or equal to 2% of the Usable Storage space offered (using 1.2TB SAS 10K PM SAS HDDs configured as RAID10 or Similar with one hot-spare. A dedicated unit for MDT (Meta Data Storage to be offered)
	Usable Storage(OST) : > 120TB usable with RAID6 or similar (using up to 4TB, 7.2K RPM SAS HDDs.
	Configured as RAID6 volumes with two Global hot-spare disks. Each individual volume to be ≤ 40TB
	Throughput : > sustained 2GB/s read/write (50:50) performance
	120 TB (usable in RAID 6 configuration or similar) Parallel File System based storage with 2GBps throughput with 1MB block size for the PFS. At least 2 I/O Nodes in fail over configuration to be quoted.
	Each I/O Node to be offered with below listed specifications: Latest generation 2 x CPU (x86 Architecture based Intel Salable CPU) each with minimum 14 Cores or more and minimum frequency of 2.2GHz (or better / latest / higher), Must have Native support of AVX2 instruction. And HPL Peak Perf @490F/socket
	Dual Redundant Power Supply with at least 80 Plus Platinum efficiency
	128GB DDR4 3200 (or better / latest / higher) MHz memory with ECC
	At least 2 no. of PCI-E x16 expansion slots
	2 x 480GB Data centre grade SSD in RAID1 (for OS)
	With Hi Speed Interconnect ports–minimum 100Gbps
	The PFS solution must be capable of handling the loss of the following without interruption: -One Power Supply -One Fan - One HDD for MDT and Two HDDs for OST - Two I/O Server Nodes The I/O server must have redundant paths to the storage.
	Benchmark report and Performance demonstration for PFS Throughput . Open-source IOR/IO Zone benchmarks running on compute nodes with 1MB block size. Storage Performance to be measured from compute node using IOR benchmark for 2GBps throughput

5. Cooling, Rack, UPS and its monitoring/support/services

Sr. No.	Items
I.	**Rack:** Vendors should propose optimum solution using at the max two 42U Racks with required PDUs and accessories.
II.	**UPS:** Two UPS Units in Failover / Redundant Configuration (1+1). Each UPS of 20 KVA/18 KW should have following features : True online double conversions, IGBT Rectifier & inverter based UPS. Three phases Input/ three phase output with SMF batteries Suitable for 30 Min or more backup on Full load at 0.9 Load P.F. using 42 Ah X 40 Battery with Each UPS, Input voltage range 340-478V at 100% load, 220-478 V @ 50% load. Input power factor 0.99. Battery Flexible design of 32 to 40 battery. Battery type should be Valve regulated lead-acid (VRLA) of make Exide/Panasonic/QUANTA. Inbuilt Input Isolation Transformer is mandatory required, parallel communication port, RS232, USB, EPO and SNMP interface, BMS interface, Dust Filter at Air Inlet point are required. UPS should be provided with environment monitoring probe to measure temperature and humidity of UPS room. LCD Display indicating all important parameters. SNMP software should be compatible to, Window 8 . UPS software should be compatible to google chrome, Mozilla fire fox and Microsoft internet explorer. Battery open rack, battery interlinks battery breaker, battery to UPS cable as required should be provided with UPS systems. *UPS warranty : 5 Year, Battery warranty – at least 3 Years* **Battery Approved Make : Quanta / Exide / Panasonic** **UPS Make acceptable:- Schneider, Eaton, GE, Gutor**
III.	**Air Conditioning Solution:** University will provide a server room of the size 15 Feet x 15 Feet or bigger (bidders can visit the site to see the space allocated. Cooling Solution Specifications as below: **i)** The Data Centre room to be provided with the appropriate Inbuilt/self contained cooling system based racks. The inbuilt/self contained intelligent rack based cooling system will able to remove high level of waste heat from server enclosures/rack and to provide uniform,& effective cooling for servers and similar IT equipment (switches etc.) installed with in racks as offered by bidder, it will be provided with appropriate refrigerant. **ii)** Total IT Load to be taken care of 18KW , Cooling solution must provide redundant solution to take care 18KW IT Load , with redundant cooling units available in the solution offered (N+N) redundant. Each Unit capable to take care of 18KW IT Load. **iii)** Outdoor Cooling Units will be positioned out side the server room. Bidders can visit the facility for better understanding before supply. **iv)** Solution must comprise 32 A, Rack mount, vertical PDU with a combination of IEC C-13 and IEC C-19 sockets according to the IT equipment **v)** Front door with biometric access, rear door lock, smoke detection system with indicators, rodent control system, Environmental Monitoring System , Automatic Front Door Opening System , Fire Suppression System & Detection Sensor, Hooter/Sensor available for alarm purpose in case of any malfunctioning, Touch Screen Front Panel Monitoring, IP Via Modbus enabled, double glass or toughened glass front panel
V.	Key Board tray, cable manager, cable route, any other required accessories as per requirement of the above mentioned configuration of master and compute node.

6. Cluster Management and other S/W Stack

Operating System	CentOS
HPC Operating System Support	REQUIRED
Resource Manager & Scheduler	Job status reporting
	Job History Reporting up to 6 months or more
	Policy-aware workload cum resource manager,
	Policy aware scheduling
	Resource-aware scheduling
	Topology-aware scheduling
	Dynamic reservation of resource
	Advance reservation Live support
	Support of job submission through CLI, Web-services and APIs
	Load aware power management
	Fair share support
	Multiple queues support
	Multiple partitions support
	Dynamic partitions support
	Dynamic queues support
	Script less job submission
	Heterogeneous cluster support
	Multi-cluster support
	MPI aware scheduling
	Consumable resources scheduling
	Pre-emptive and backfill scheduling support
	Application integration support
	Live reconfiguration capability
	SLA/Equivalent
	GPU and Co Processor Aware scheduling
	CPU, Multi Core , Multi thread aware scheduling
	Intuitive web interface to submit and monitor jobs
Resource Management/Job Scheduling Support	REQUIRED
File Systems Supported	Lustre , GPFS FROM DAY ONE
Commercial Licensed Cluster Management S/W (License issued in the name of JIWAJI UNIVERSITY GWALIOR)	Unified system management, monitoring toolset for configuration, diagnosis and management of the system, Cluster manager with provisioning, monitoring and reporting capabilities Support Package and Image based provisioning Support Disk-full and diskless cluster deployment Intuitive web interface to manage and customize the cluster Customizing networks and compute node profiles through GUI Customizing compute nodes (upto changing kernel parameter) Able to Push configuration changes and updates to the compute nodes without reinstalling and rebooting Note : Offered Stack must have been deployed by OEM / Bidder earlier as well as part of HPC Solution – documentary evidence must be provided.
Software Support for both Serial and Parallel Environment	YES
Intel Cluster Studio – for Academic	Intel® Parallel Studio XE Cluster Edition for Linux* - Named User License Academic for 3yrs (ESD)

7. Other Items

Sr. No.	Items
I.	1 Unit of – 25-inch Display, Keyboard, Video and Mouse (KVM) Console with All accessories with each.
II.	1 Unit of - 24 Port KVM over IP Switch (USB based) with all required Cables & Accessories.
III.	1 Unit of - 24 Port ,1 Gbps (RJ-45) Ethernet Switch for Secondary Communication Purpose and 1 unit of 48 Port, 1 Gbps (RJ-45) Ethernet Switch for management.
IV.	36-ports OR MORE based, 56Gbps, 100% Non-blocking, Switching Fabric (Mellanox Infini-band or higher or Intel Omni-Path) with embedded Sub-net Manager for 36 devices (Nodes) or more and with redundant power supply/supplies. All cables (at least 1m in length or more) required for connecting the devices (Nodes) quoted in this tender should be included/bundled.

Supply, Installation and In-house training for HPC :-

- Before acceptance and installation of any item, the quality, specification and quantity will be verified by JIWAJI UNIVERSITY GWALIOR.
- Installation of items part of this tender will have to carried out by the vendor. Any specific requirement of vendor regarding installation of above mentioned items must be mentioned in the technical bid so that JIWAJI UNIVERSITY GWALIOR can provide the resources for the same.
- **2-3 days (as needed) in-house training** by Certified Professionals at JIWAJI UNIVERSITY GWALIOR including installation of software, bench-marking HPL, monitoring of HPC Cluster for 24 Hours, LINUX commands, HPC Management etc. Scripts for the bench-marking calculations will provide on request.

Eligibility Criteria

Mandatory requirements for a bidder to qualify as a participant in this tender:

1. The Server OEM should have executed at least 3 HPC Cluster projects either directly or thru system integrators(at least one cluster of the size 100TF CPU-CPU or CPU-GPU) during last 10 years in India using an architecture and technologies similar to this tender in premier Govt Indian academic and research institutions like IISc, TIFR, IISER, IIT, JNCASR or other govt education & research organizations' in India. Details/Proof of the same must be submitted with technical bid. Credential of an OEM will also be considered if supply done by their authorized partner.
2. Storage OEM must have supplied 2 x PFS solutions (50TB or more) earlier in the past along with HPC Solutions during last 10 years in India using an architecture and technologies similar to this tender in premier Govt Indian academic and research institutions like IISc, TIFR, IISER, IIT, JNCASR or other govt education & research organizations' in India. Details/Proof of the same must be submitted with technical bid. Credential of an OEM will also be considered if supply done by their authorized partner.
3. Neither Server OEM nor the bidder be debarred or blacklisted or stopped from supplying equipment to any govt organization in the past.
4. OEM MAF for Server Nodes , Storage and Switches must be attached with the bid .
5. All warranty and support must be provided by the bidder.
6. The bidder should have at least one service Center in India with service engineers in the relevant field of quoted item.
7. The bidder should have valid ISO certification. Please attach a copy of the certificate.
8. The bidder must be authorized partner/system integrator of Server and Switch OEM and a letter of authorization for the tender from the OEMs must be enclosed.
9. The Institute reserves the right to accept or reject any or all of the offers in full/part without assigning any reason whatsoever.
10. The parts supplied should not become obsolete within 3 years of installation.

11. The bidder should clearly specify make and model in both Technical and Financial bid.
12. The bidder must be responsible for complete installation and support the infrastructure.

Commercial Offer as below:

Item	**Unit**
Master Node with all accessories	1
CPU-CPU Node with all accessories	14
CPU-GPU Node with all accessories	1
PFS Storage	1 Set
Primary Interconnect	1
Secondary Interconnect	1
Management Interconnect	1
Intel Cluster Studio License	1
Cluster Management	1
UPS Solution	1
Cooling Solution	1

2. **Technical Specification for Scanning Electron Microscope-EDAX**

Scanning Electron Microscope (SEM) having fully automated microscope setup with EDS and Sputter Coater - System should have specification similar or better than as given below. The quoted model must be globally available.

Sr.No.	Parameter	Details
1.	Electron Source	Tungsten Filament Enough numbers of filaments must be provided for three year of operation
2.	Image Resolution	3.0 nm at 30 kV (SE detector) 4.0 nm at 30 kV (BSE detector) 15nm or better at 1kV
3.	Accelerating voltage	Adjustable from 200 eV to 30 KeV or better
4.	Probe Current	1 pA to 2 µA or better
5.	Magnification	10x to 8,00,000x or better
6.	High Vacuum System	Vacuum level in the chamber and column should be equal to or higher than 10^{-3} Pa. Pumping time should be less than 5 minutes High vacuum to low vacuum changeover: There should not be any manual aperture insertion / part insertion to convert high vacuum mode to low vacuum mode and vice versa
7.	Low Vacuum or variable pressure	Vacuum range – 10 Pa – 400 Pa or better
8.	SEM Chamber	• Internal Dimension: 230 mm diameter • Sample height 50 mm or more • Sample diameter 100 mm or more/better • Chamber ports 6 or more with ports for future up-gradation of accessories
9.	Specimen Stage	5 axes fully motorized stage with following movements: • X = 80 mm or higher • Y = 55 mm or higher • Z = 45 mm or higher • Tilt from –10° to +70° or better • Rotation: 360 degree continuous • Multi sample holder for holding 7 or more sample stubs,
10.	Standard Detectors	• Chamber SE Detector Chamber BSE detector
11.	SEM Automated Operation	• Automatic WD (Focus) & Stigmator, • Contrast & Brightness • Scanning Speed (According to Signal – Noise Ratio) • Gun heating • Gun centering • Column Centering • Vacuum Control • Auto-diagnostics • Direct and continuous control of beam spot size. • Direct and continuous control of beam current
12.	SEM Computer	Intel Core i5 or higher, 16GB RAM, SSD 1TB, Windows 10 Pro 64-bit, touch screen
13.	Image Acquisition and display	• 24-inch LCD/LED touch screen • Scanning Speed: From 50 ns to 10 ms per pixel adjustable in steps or continuously • Image Size: Selectable up to 8 k x 8 kpixels or better • Image Depth: Up to 16 bits per channel • Image Formats: BMP, TIFF, JPEG, GIF, PNG or PGM, PPM • Point & Line Scan, Image rotation, Image shift, Tilt compensation • Dynamic Focus – in plane or folded plane • Multi Detectors Display: Displaying of up to 4 live detector signals simultaneously in four frames side by side • Detector Mixing: Provision for mixing in user defined ratios& display of different live signals from same field of view. • Signal averaging using Frame Accumulation or Line Accumulation
14.	SEM Software	• Image Operations • Analysis & Measurement • Image Processing

Sr.No.	Parameter	Details
		• Image Measurement • Remote control network software with internet TCP / IP open protocols. • Built-in self-diagnostics for system readiness check
15.	Sputter Coater	Sputter coater for Au/Pd coating should be quoted along with required accessories like rotary pump and necessary gas cylinders.
16.	EDS Detector	EDS X-Ray Micro Analysis System Liquid Nitrogen Free EDS detector Acquisition modes: Spectrum from region, point & ID, line scan and elemental mapping are included EDS detector chip/window size 30 mm2 EDS detector with Si3N4 window 129 eV resolution @ Mn Kα Number of pulse processing settings: 3 Maximum input count rate: up to 1,000,000 CPS Maximum output count rate: up to 300,000 CPS Quantification: standard less, ZAF corrected
17.	Consumables	Consumable (like apertures, Rotary pump oil, Rotary pump filter, necessary O rings) required to run instrument for three years to be quoted as standard supply. Following consumables must also be quoted along with the instrument: Carbon conductive adhesive tape – 3 no.s Specimen Stubs – 30 nos.
18.	Calibration sample	Standard sample calibration of SEM and EDS should be provided
19.	On-Line UPS	Suitable on-line UPS (6kVA) with minimum 30 hour back up
20.	Essential Accessories	• Track ball for imaging operations • IR Chamber scope: Chamber view camera (IR CCD) • Touch alarm safety detector for specimen stage and detectors. • TCP / IP Remote control Network interface &software for remote operations and on-line fault diagnostics. • All essential operating accessories like air compressor, water re-circulating chillers, gas cylinders, regulators, chillier, etc, if required have to be included in the offer.
21.	Warranty	The instrument including UPS (if any) quoted for it should be under on-site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on-site, the manufacturer must confirm this in their quotation. **Comprehensive Maintenance Contract (CMC)** : After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected, i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document. The comprehensive Warranty should cover: (1) All parts including accessories, spares and labour on-site. (2) Free maintenance and service on-site or at factory (if needed) with no cost, and (3) Regular free up-gradation of software if any.
22.	Installation and Training	The installation of the instrument should be done by service engineers at free of charge. Operational training should be provided free of charge at the university premises
23.	Spare and consumables availability	Spares and consumables should be available up-to 10 years after installation and commissioning
24.	Price	Please quote CIP and FOR Price DSIR certificate will be provided for custom duty exemption Custom clearance and local transportation are the responsibility of the vendor
25.	Payment Terms	100% Letter of Credit (90% payment against shipping documents, 10% LC after installation and commissioning.

3. **Technical Specification for Physical Parameter Measurement System**

S.No.	Parameters	Desired Specifications
1.	Base-System	a) System should be fully liquid cryogen-free, i.e., no requirement of externally supplied liquid Helium and/or liquid Nitrogen at any point of time. Single 2-stage Pulse Tube cryocooler to cool both the superconducting magnet and the temperature control system, providing a low vibration environment for sample measurement. Small amount of helium gas for its fully automated startup and operation.
		b) Any Liquid Helium and/or cold Helium gas flow into sample chamber or to any other parts within the system, and all low temperature operations must be handled in fully automated way through electronic and computer controls. The system should NOT have any manual control in the entire operation of the system.
		c) A dedicated window for monitoring cryostat status.
		d) System should have fully automatic and precise Temperature Controller, External Gas Flow to control the temperature automatically through PC and Software without manual intervention.
		e) The system should be equipped with sufficient number of thermometers at different stages / locations and on cryocooler and magnet to monitor their temperatures through the main operating software.
		f) For Ease of operation Suitable Sample Chamber with 30mm or better Sample space to accommodate sample mounting that, 6should allow accessibility to samples having up to at least six different contacts (for each sample) with corresponding electrical feedthroughs. The vendor must supply a pad mask file (in GDSII/Auto CAD format) for the contacts on the sample that can be used by users to prepare their device samples.
		g) Suitable Electronics and controllers like Current, Voltmeter, Temperature Controllers, Lock in amplifiers etc. should be chosen from very Reputed Suppliers, and have the capacity for interfacing over IEEE488.2/ModBUS standard.
		h) The system must have a large temperature controlled region, or sample chamber 30mm or more, that can either be under vacuum or use various exchange gases. Material samples can be measured either with, or without, measurement probes giving users more flexibility in research design and scope.
		i) The capability of the system performance and specifications have to be supported with valid and certified documents and published works along with list of installations worldwide including the contact details (address, phones and emails) of the customers. Supplier should also provide the List of the 100% Cryogen Free High

		Field 9T or more Magnet systems min 3 installations in India
2.	Superconducting magnet	a) ±9 Tesla or Higher field strength (longitudinal field) b) Sweep rate: Up to 200 Oe/sec. c) Field Homogeneity: ± 0.01 % over 3 cm on axis (for standard measurements without compromising the Specifications ± 0.1% is also OK) d) Magnet has to be cooled by solid conduction without any liquid helium. e) Magnet ramping (9T Or Higher) should not affect the temperature stability f) Thermometer directly on the magnet. Automatic discharge of the magnet if the cryocooler system fails (For example, due to water chiller failure.). g) Magnet control software monitors the temperature of the magnet and cryostat at various locations to ensure proper operation of the magnet system from quenches. h) Bi-polar power supply with over voltage protection and indication. i) Various operating modes: Linear, Oscillating, No Overshoot must be given in details. There should be no overshoot in the field or the tolerable overshoot in "No Overshoot" mode should be specified for various field strengths. j) A built in magnetic shield to maintain 5 gauss line < 30 cm from the surface of the cryostat cabinet allowing the system to be installed closer to other sensitive instrument for better lab space utilization (provide data). k) Magnet should be protected from quenches. l) Ultra Low Field to reduce the remnant field in the range of 20 to 30 mT with step of 1microTesla (this point should be included especially for higher field magnets like 9T and above)
3.	Temperature Control	a) Cryostat assembly continuous low temperature operation. All the operations must be completely automatic without user intervention. b) The system should enable cooling of samples from highest temperature to the lowest at the highest specified cooling rate at any given magnetic field of up to ±9 T or Higher magnetic Field without affecting the system performance including the heating of magnet. The same procedures should be hold for heating of the samples as well. c) System should have sophisticated temperature control and provide seamless transition between high temperature (400 K) with minimal cooling power needs, intermediate temperature with rapid slewing and large cooling needs and stable operation near the base temperature (< 1.8K) with cooling provided by evaporation of liquid helium. d) System should have sophisticated temperature control and provide seamless transition between high temperature (400 K) with minimal cooling power needs, intermediate temperature with rapid slewing and large cooling needs and stable operation near the base temperature (< 1.8K) with cooling provided by evaporation of

		liquid helium e) The sample chamber has to be sealed for controllable sample environment. Suitable Gas Handling mechanism to control the Sample temperature precisely. f) Temperature range of 1.8 (or lower) to 400 K with milli-Kelvin stability and accuracy. g) Temperature stability should be at least ±0.5 % for T < 10 K and ±0.05 % for T > 10 K irrespective of the magnitude of applied magnetic field. h) Accuracy: ± 1% and sweeping rate 0.01 to 30 K/min (10 K/min Heating) irrespective of the magnitude of applied magnetic field. i) Fast Settle, No Overshoot, and Sweep mode. j) Temperature control should be fully automated. k) System should have fully automatic and precise low Temperature Controller for continuous low temperature operation to allow the measurements < 4.2K continuously for long time l) Various modes of Fast settle, No overshoot, and sweep mode must be given in details.
4.	Vacuum pumps and fittings	System should come with suitable Vacuum pumps and fittings along with vacuum gauges, meter, standard vacuum coupling essential for the uninterrupted functioning of the instrument and its various measurements options must be included.
5.	Data acquisition and analysis	a) Licensed windows based operating software and State- of- the- art computer control system compatible with the measurement options with all the necessary hardware interface with National instruments (Or equivalent) data acquisition card. b) The software should allow user to select the type of measurement to be made, to create, store and retrieve measurement sequences and customize the range of variables measured at each point of a sequence. A licensed copy of the LabVIEW should be provided, allowing customer the access Temperature Control & Magnet control and other electronics to set his own customized measurement c) Remote user access to the system via Internet. d) The software must allow the users to remotely control and monitor experiments over any internet connection. e) Any necessary analysis software commonly offered by the bidder must be included.
6.	Accessories, tools, and documentation	A complete set of spare fuses, O-rings, Hoses for chiller unit, Helium gas regulators, tools needed for user tasks, and complete set of manuals / documentation exhibiting compliance must be provided. A service manual with complete circuit diagram and PCB layout for all equipment to be provided with the instruments.

7.	Essential measurements	**a) *Electrical transport*** i) Both ac and dc electrical transport measurements must be possible. ii) 4-wire & 2-wire resistivity and simultaneous Hall effect measurement, I-V characteristics. The software should be programmable for differential resistance measurement (dV/dI vs. I or dV/dI vs V). iii) Simultaneous measurements of at least two samples with independent source and measure options must be provided. iv) A high impedance measurement using 2-wire measurement method must be possible for samples with impedance up to 5 GΩ or higher. v) Current Source: DC & AC, 10nA (or less) to 8 mA (or more) for both DC as well as AC should be possible. Frequency range of 1 Hz to 200 Hz or wider for ac measurements should be possible. vi) For sample mounting, in addition to standard mounting, an option for 16 pins (or higher) lead less chip carrier (LCC) must be provided. vii) Automated option for Van der Pauw and Hall effect measurements must be possible. **b) *DC Magnetization*** i) Temperature Range: 1.8K (or lower)– 400K (or above). ii) Magnetic Field: ≥ ± 14 Tesla. iii) Top loading sample arrangement, sample mounting. iv) VSM measurements should be possible: VSM sample holders for powder, bulk (polycrystalline and single crystal samples) and thin- films. v) VSM Oscillation Frequency (calibrated): Range of 20 - 60 Hz or wider. vi) RMS Sensitivity at Field B: 5 x 10 -6 emu or better vii) Suitable sample holders for powder, pellets and thin films. Possibilities for measurements in parallel & perpendicular to applied magnetic Field must be provided. viii) Measurement Range: 10 -6 to 100 emu ix) Maximum amplitude should be 2mm or higher x) VSM must support software-based auto positioning of the sample xi) coil with suitable bore to adapt the sample of 5 mm or smaller xii) NIST based samples must be provided for calibration of magnetic moment at low and high magnetic fields/temperatures **c) *AC Susceptibility*** i) Temperature Range: 2 K – 350 K (or wider) ii) Magnetic Field: ≥ ± 14 Tesla. iii) Accuracy: 5% or better over entire temperature and field range. iv) Frequency Range: 10Hz – 10KHz or wider.

		v) Must have higher harmonic measurement option vi) Sensitivity should be 10 -7 emu OR better(for AC measurements) and 3×10 -5 emu (DC measurements). vii) Phase Setting accuracy (Real & Imaginary part) : 0.1 0 **d) *Heat Capacity*** i) Temperature Range: 2 K – 300 K or larger ii) Magnetic Field: ±9 Tesla or higher iii) Measurement Accuracy: 5% or better over 2K – 300K iv) Heat Capacity resolution: 10 nJ/mole.K or better at 2 K **e) Thermal Transport** *i*) Temperature range 1.8 K to 350K or higher, with a capability to measure thermal conductivity, Seebeck coefficient, thermoelectric figure of merit ii) Thermal conductance measurement accuracy: ± 5 % or better iii) Typical accuracy of the Seebeck coefficient: ± 5 % or better iv) Seebeck coefficient measurement range: 1 μV/K to 1 V/K or wider.
8.	***Water Chiller Unit***	Suitable closed cycle water chiller unit with the suitable capacity for trouble free continuous running of the main PPMS system.
9.	***Multi-Function Probe***	(a) Consistent with the optional specification 1, the multi-function probe should facilitate easy access to the axial ports and connectors which can be configured to route electrical and thermometer connectors to the sample space. Should have facility to mount the sample Parallel or Perpendicular to the Magnetic Field. Suitable Cernox Temperature sensor should be incorporated to precisely control the temp from 1.6K to 400K. (b) There should be direct axial electrical and other ports to sample stage provided to install any needed electrical and thermometer leads. (c) It must have at least 2 sets of 4 electrical leads on sample PCB interface for electrical transport experiments 12 Pin Fisher socket for sample electrical contacts and 6 pin Fisher sockets for Heater and thermometer wiring. (d) Sample stage should have integrated thermometer (e) Sufficient supporting information must be provided with the offer.
10.	***Installation requirements***	a) Bid should contain information about the requirement of helium gas replenishment. b) Pre-installation site preparation requirements to be included and specified along with the bid. c) The bid should also indicate what kind of service/maintenance is required for the system. Whether this service has to be carried out by a company engineer or can it be done by trained service personal within India.

11.	***Demonstration and standard samples***	Standard samples to be provided by the company for testing the instruments at the time of installation on site to the quoted accuracy in the given technical specifications for the demonstration of the performance of the equipment. Guaranteed specifications to be demonstrated at the time of installation. Any necessary standard samples for that purpose should be brought by the service engineers.
12.	***Additional requirements***	a) In addition to the technical specifications listed in this table, the bidder must satisfy all terms listed under optional items table below for future upgradability. b) The offer must be supported with the measurement data and refereed literature. Mere statement of compliance will not be considered sufficient. Technical evaluation by the institute may include demonstration to verify functionalities and capabilities of the system quoted. Vendor must submit factory acceptance test procedures supported with relevant printed literature and certificates. c) **Installation in India:** List of similar equipments installed during last five years in institutes like IIT/NISER/IISER/NIT's/Universities/DAE Units/Defence units in India with Contact person name, address and phone number, email id must be specified. The vendor must have supplied and installed at least 3 to 4 similar equipment in the above institutes in last five years plus the track record of old cryogen free High magnetic field systems in past 10 years. d) No part shipment will be acceptable.
13.	***Warranty***	The instrument including UPS (if any) quoted for it should be under on-site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable parts. Any repair work or replacement of spares needs to be done on-site, the manufacturer must confirm this in their quotation. **Comprehensive Maintenance Contract (CMC)** : After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected, i.e., the system should be covered for comprehensive warranty for 5 years from the tenderer. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document. The comprehensive Warranty should cover: (1) All parts including accessories, spares and labour on-site. (2) Free maintenance and service on-site or at factory (if needed) with no cost, and (3) Regular free up-gradation of software if any.
14.	***Power Supply***	Should meet Indian Power standards preferably without use of external converters.
15.	***System Consumable Parts***	Basic frequently required spares should be provided for the entire period of extended warranty and for an extended period of next 5-years. A list of these items should be attached with the quotation.

16.	***Installation and Commissioning***	i) Installation, complete interfacing of the system with its subsystems, and commissioning is to be carried out by the vendor's factory-trained engineers, followed by a demonstration of the system's performance to the user's complete satisfaction. ii) An estimated time schedule for installation, commissioning and training must be provided.
17.	***Training***	i) The manufacturer/supplier of Custom Physical Parameter Measurement System should provide at least seven days onsite training initially during installation. ii) The supplier or manufacturer should also provide dedicated five days advanced training subsequent to the above training installation. iii) Regular follow up training every six months during the period of extended warranty on mutually convenient dates for hardware, software and application to the laboratory personnel in the installation, operation and maintenance of the instruments.
18.	***Support and Service***	1. The manufacturer and/or their Indian representative must have at least two qualified and factory trained service engineer in India to be able to attend to service at Jiwaji University, Gwalior within 48 hours on submitting a complaint. Training certificates from the manufacturer have to be provided with the tender. 2. For warranty period only factory trained and certified engineers are acceptable to attend the service. 3. The response time with an engineer on site must be less than 48 hours from the notification of the failure. The company must provide evidence that it can fulfil this requirement. 4. In case the parts are required to be imported for repairs, the same should be made available within 2 weeks from the date of reporting of the issue. Any extension in this time will need to be compensated by the manufacturer by extending the comprehensive warranty by the excess period taken (i.e. period beyond 2 weeks) in completing the repairs. 5. A 10% performance guarantee will need to be maintained during the period of extended warranty.

l. No.	List of optional items
1	***Measurements***
	a) Optical and optoelectronic measurements
	The system should have 4 quartz windows connected to the cold space so that optical measurements like photoluminescence (using externally coupled light sources through an optical fiber, with external detectors using another set of optical fibers) and electroluminescence (using electrical feed through for stimulus, and optical fibers for out coupled light for optoelectronic measurements) can be carried out. All optical fibers (SMA905/FC1 only) should be external to the cold space and never undergo thermal cycling during use. This may be accomplished by providing a specially designed annular optical assembly that mounts externally in a unique way on to the 4 quartz windows and uses 45 degree mirrors to couple light signals in/out of 4 fixed (but user replaceable) optical fibers, which are thus never bent inside the system. The optical assembly should be thin enough to mount in the annular space between the cold space and the enclosing magnet so that optical and optoelectronic measurements can be made under the system magnetic field. The assembly should be easily user mountable in a unique and easily identifiable manner for quick mounting and removal for different experiments. The length of the optical fibers should be sufficient to connect to external equipment such as light sources, optical power meters, spectrometers, etc.
	b) Magneto Optical Measurements:
	i) Consistent with specification a) above, this option should allow a sample to be illuminated by an external light source while conducting magnetic measurements. Option should include all the necessary parts and components to generate light for a certain wavelength and couple it in a fiber optic to transfer the light to the sample during magnetic measurement.
	ii) This option must be provided with a high power Xenon lamp source with housing, Variable lamp power supply, multiple position filter wheel, set of bandpass filters, Dichroic mirror, Fiber coupling optics and SMA connector for the fiber delivery and safety components.
	iii) A high-resolution CCD cooled spectrometer, such as Acton PI, along with needed fiber optic coupling should be provided.
	iv) Temperature range 1.8 K to 400K
	c) FMR measurements:
	i) Frequency bandwidth: 2-8 GHz or wider
	ii) Temperature range: 5 K -350 K or wider
	iii) Magnetic field: up to 9 T or higher
	d) Electrical Transport measurements
	i) Possibility for two axes rotation of samples in magnetic field should be included.
2.	Additional accessories to enable use of He_3 as the working gas for refrigeration.

6. Technical Specification for Gas Chromatograph Mass Spectrometer (GCMS)

Sr. No.	Specification	Description
1.	Column Oven :	Large column oven up to 450 ^{o}C from room temp to + 4 ^{o}C with a temperature programming up to 15 steps or higher and rate setting range up to -250 to 250 ^{o}C /min with a total time for all steps up to 9999.99 minutes max and oven cool down time from 450C to 50C in 3.50 minutes or less
2.	Injection Ports, Detector & Auto Injector:	Two Capillary Injection ports up to 450 ^{o}C with Electronic Control and AFC pressure range should upto 970 kPa or 140 psi. The Same injection port should be able to connect upto 0.53mm ID Capillary column directly. The Electronic Flow control should be able to program for Pressure /flow minimum 7 step with a split ratio setting up to 9999.9:1. System should be upgradable to 3 injector ports simultaneously.
		FID Detector sensitivity should be 1.2 pgC/s , G C should be upgradable to 4 detectors simultaneously.
		Liquid Auto Injector of Minimum 100 Vials should be included.
3.	Mass Spectrometer :	Quadruple Mass Analyzer with Range up to 1.5 to 1000 amu with scanning speed of 20,000 amu/sec , maximum scan cycle should be 100. Number of temperature Zone should be 8 GCMS should have a TMP pump must be more than 300 L and Rotary pump. Filament should be dual and automatic switchover and possible Dynamic Range should be 8 x 10^{6} or more.
		Retention time should be highly precise for correction over the entire chromatogram, and analytical conditions are not changed, so the SOP does not need to be changed.
		Starting/stopping the system fully automatically from the computer.
		Software should allow flagging with two criteria on both the upper and lower ends, and displays a list of quantitative results and chromatograms for all components and all samples. Detailed verification and correction for each component also should be possible. Reports can be output as summary reports.

		SIM channel should take up to 64 x 128 Channel Ion source can be independently heat up to 200 deg and energy can be varied up to 200 eV.
		GCMS Should be quoted with Simultaneous SCAN & SIM mode GCMS should be with EI Scan sensitivity 1 Pg for OFN at S/N >= 2000 RMS and with a Licensed version only.
4.	Data Processor – Software and utilities	Latest 32 / 64 bit software of the Creation of automatic SIM Table, Automatic adjustment of Retention time, Similarity Search, with retention index . GCMS instrument tuning should be automatic. Latest licensed NIST 2017 library should be offered along with the instrument.
		PC based latest version GC with Large LCD Display with touch screen to view Real time Chromatogram on the LCD and built in GC System check and self-diagnostic function with following specification GCMS should be upgradable for online connection with reactor with a automated valve connection .
		GCMS Should be supplied with all installation accessories required like branded PC, Printer, He, H_2,N_2, Air cylinder with dual stage regulator- 1 no Each, gas purification panel with necessary accessories , one 30 meter capillary column, Liquid Syringe.
		Following consumables to be offered with the quotation: Graphite and Vespel Ferrules (10 each), Silica wool, Septum (50 pcs), Filament (02 pcs) Split and Splitless liner (05 each), Nuts (10 pcs), O-Ring (10 pcs), 1.5 ml vials with caps and septa (200 no's), Gas Filter Kit, Split Filter, Tool Kit
5.	UPS	Online 7.50 KVA or more UPS branded with at least 30 minutes back up to be quoted separately with offer
6.	Pre-installation requirement:	Necessary pre-installation advice should be sent immediately after the placement of the order.
7.	Installation Commissioning and Application training:	Free of cost at site for a group of technical staff/ students for operating the instrument. On-site Training should be provided twice in a year up to warranty period of 3 years.
8.	Warranty:	The instrument GCMS including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the

		manufacturer must confirm this in their quotation.
9.	Comprehensive Maintenance Contract (CMC):	After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
10.	Installation in India:	Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
11.	Performance:	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
12.	Validity of Quotation:	Minimum 3 months.
13.	Submission of Bids:	Tender should be submitted in two parts- Technical and Financial.

7. Technical Specification for CHN Analyzer

Sr. No.	Specification and Description
1.	Should be Compact analyzer for the determination of C / H / N in both solid and liquid samples.
2.	Analysis time: should not be more than 10 minutes.
3.	It should be fully automated having facility of automated transfer of the sample.
4.	It should be auto sampler (Range 50-150 samples).
5.	Determination of CHN should be in a single run with accuracy and precision.
6.	Automated evaluation of C/N and C/H ratio
7.	Analyze from few ppm to 100%.
8.	Sample weight: up to 1000 mg of the sample
9.	System should include Software which can store data and handle for statistical analysis and report generation.
10.	Measuring range: carbon from 0.02 mg to 200 mg,
11.	Measuring range: Hydrogen from 0.1 to 12 mg.
12.	Measuring range: Nitrogen: 0.04 to 50 mg.
13.	Temperature range 100-1100 Degree Celsius
14.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
15.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
16.	Warranty: The instrument CHN Analyzer including UPS should be under on site Comprehensive

	warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
17.	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
18.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
19.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
20.	Validity of Quotation: Minimum 3 months.
21.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

8. Technical Specification for Atomic Absorption Spectrophotometer

Sr. No.	Specification	Description
1.	Optics	Double Beam- With Flame and Furnace
2.	Wavelength Range	185-900nm
3.	Detector	Photomultiplier tube (It Should be Wide PMT To Cover Complete Range 185-900nm)
4.	Back ground Correction	It should be Two background Correction D2 with SR Or Zeeman Background Correction
5.	Spectral Bandwidth	Variable from 0.1 to 2 nm in 6 Steps
6.	No Of HC Lamps	Minimum 8 Lamps Turret or more with 2 lamps simultaneously lit .
7.	Base Line Correction	Automatic Correction Of Baseline drift by offset correction in peak height and peak are mode.
8.	Focal Length	300 nm or better.
9.	Monochromator and Grating Lines	Czerny Turner Monochromator with 1800 lines/mm
10.	Flame Type	Air Cooled pre mix type or better.
11.	Burner Unit	Titanium 10cm slot and 5 cm titanium slot for N_2O-C_2H_2
12.	Nebulizer	Pt-Ir capillary with teflon orifice and ceramic impact bead
13.	Chamber	Polypropylene type
14.	Gas control unit	Fuel: automatic search for optimum flow rate, Automatic search of optimum gas flow rate
15.	Safety features	Automatic gas leak check · Automatic switching between Air-C_2H_2 and N_2O-C_2H_2 · Flame monitor · Prevention of wrong burner head use · Gas pressure monitor · Drain tank level monitor · Automatic flame extinction upon power outage or sudden power interruption
16.	Software	Software based AA, Should haveQA/QC Function or similar functions

17.	HVG (Hydried Vapor Generator for As,Se,Sb,Te,Bi.)	Should be attached
18.	Analysis System	Continuous flow system
19.	Sample consumption	Variable
20.	Reagent consumption	Variable
21.	Atomizer	Heated absorption cell, standard systemshould uses air-C_2H_2 flame
22.	Operation through	Auto Sampler.
23.	Auto Sampler	Auto Sampler should be quoted with min 60 vial capacity or more and auto sampler should be capable to use for both flame and furnace.
24.	Graphite Furnace	Graphite furnace should be included with temp range up to 2800 degree or more with position lateral/ vertical manual adjustment
25.	Accessories	C2H2 Cylinder with Regulator, Nitrous Oxide Cylinder with Regulator & Pre-heater, Argon Cylinder with Regulator, Air Compressor, Fume Hood, Chiller for Furnace, Suitable branded Windows 10 PC with laser jet printer. The MS office will be original package to be included. Lamps and individual standard solution (1000 ppm) for Zn, Mn, Ni, Fe, Cu, Pb, Al, Mo, Cd, B, Cr, Co, As, Hg, Se. (Total 15 lamps and standards)
26.	UPS	5.0 KVA or more Online UPS branded with at least 30 minutes back up to be quoted separately with offer
27.	Pre-installation requirement:	Necessary pre-installation advice should be sent immediately after the placement of the order.
28.	Installation Commissioning and Application training:	Free of cost at site for a group of technical staff/ students for operating the instrument. On-site Training should be provided twice in a year up to warranty period of 3 years.
29.	Warranty:	The instrument Atomic Absorption Spectrophotometer including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
30.	Comprehensive Maintenance Contract (CMC):	After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
31.	Installation in India:	Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
32.	Performance:	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
33.	Validity of Quotation:	Minimum 3 months.
34.	Submission of Bids:	Tender should be submitted in two parts- Technical and Financial.

9. Technical Specification for Automated Nucleic Acid Extraction System

Sr. No.	Specification and Description
1.	An automatic system for extraction of contamination-free DNA & RNA from a range of sample types, Such as Bacterial Cells, Plant Tissue, Fungi/Yeast& Total Viral Nucleic Acid using magnetic bead based chemistry.
2.	System should be of a small footprint.
3.	System should use cartridges Pre-Filled as well as non prefilled with reagents and paramagnetic particles
4.	System should work in stand-alone mode and/or Tablet / PC controlled mode
5.	System should be capable of processing 16 or more samples in per run.
6.	System should not use tips and liquid suction. Instrument should not involve any liquid transfer step to avoid sample cross contaminations.
7.	Elution should be heated with provision of 30-100 µl or better.
8.	Extracted Nucleic acid should be of high purity and should be compatible with wide range of downstream applications such as Sanger and Next Generation Sequencing (NGS), arrays and digital PCR.
9.	The instrument should come along with quantitation system (micro vol spectrophotometer) for nucleic acid quantitation necessary after isolation of DNA /RNA. Quantitation system should be sensitive enough to detect 10 pg /µl of DNA &100pg/µl RNA .
10.	Should have in-built UV sterilization.
11.	Should offer pre-programmed methods for the kits for various sample types.
12.	Should have LCD/tablet display panel.
13.	Should have minimum 5 installation in India. Enclose the user list.
14.	Quote the kits price (Per sample cost)
15.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
16.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
17	Warranty: The instrument Automated Nucleic Acid Extraction System including 2KVA online UPS should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
18	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
19.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
20.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
21.	Validity of Quotation: Minimum 3 months.
22.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

10. Technical Specifications For Real Time PCR

Sr. No.	Specification and Description
1.	The system should have block of 96 x 0.2 ml tubes or plate to run typical 0.2ml tubes, strips, and plates
2.	The base thermal cycler should be able to do standard PCR
3.	The System should have a gradient block offering temperature differential range of 1-24^0 C.
4.	The Gradient Block should offer Dynamic Ramping.
5.	Excitation Source: LEDs ,Detection Source: Photodiodes
6.	The system should detect minimum 2 fluorophores in the same tube.
7.	The system should be capable of Detecting commercially available universal dyes like FAM,SYBR Green I, VIC, HEX, TET, Cal Fluor gold 540, ROX, Texas sRed, etc.
8.	The system should have maximum ramping speed not less than 5^{O}C/ sec.
9.	Peltier Cooling & Heating for uniform temp control
10.	Channel dedicated for FRET experiments is preferred
11.	Excitation –Emission range: 450- 580nm or better
12.	Dynamic range of 9 orders or above
13.	Open system capable of running various chemistries, reagents and plastic ware so that different chemistries using TaqMan, SYBR green etc all can be performed.
14.	Temperature range 0– 100 ^{O}C with accuracy of ±0.2 ^{O}C and uniformity of a. ±0.4 ^{O}C within 10 sec of arrival at 90 ^{O}C
15.	System must be capable of working with minimum sample volume from 1- 50µl with 10-25 µl recommended.
16.	Should have multiple scan modes with a FAST scan option for reading all wells in 3 seconds
17.	Software should have express load feature which allows entry of data after experiment.
18.	And a special software to publish data as per MIQE guidelines should be supplied free of cost.
19.	Real time PCR should be licensed for both IVD and Research applications and license copy must be provided.
20.	E-mail Notification facility with data file after the run is complete is needed.

21.	A compatible branded PC Minimum i5,4GB Ram, 500 GB HDD,19inches falt color monitor, Windows 10 professional should be provided for running the system. (optional)
22.	2.0 kva Online UPS with 15 minutes back-up to be provided with the machine and rates to be quoted separately with offer.
23.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
24.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
25.	Warranty: The instrument Real Time PCR including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
26.	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
27.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
28.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
29.	Validity of Quotation: Minimum 3 months.
30.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

11. **Technical Specifications for Automatic Kjeldahl Nitrogen Analyzer**

Sr. No.	Specification and Description
1.	Complete microcomputer control.
2.	Self inspecting function for all pump, value and detector, easy trouble shooting
3.	Compatible with 42 digestion tubes or more
4.	Automatic distillation, titration, calculation, printing, waste, cleaning system.
5.	Large-screen color touch screen, friendly man-machine dialogue.
6.	High-precision liquid pump.
7.	No loss of Nitrogen
8.	Accurate dosing of reagents
9.	Distillate temperature stays below threshold
10.	Data Exporting to pen drive or PC
11.	Drip tray collects splashes
12.	Zero pressure steam generator
13.	Measuring Range: 0.1-240mgN
14.	Analysis time: 4-6 minutes/sample
15.	Sample amount: Solid 5g/sample, liquid 20ml/sample
16.	Cooling Water Consumption in the Distillation process:- 1.5L/ minute
17.	Data Storage capacity: 140000 groups
18.	Power supply: 220AC±10%, 50Hz, 2Kw
19.	Output interface: USB or RS 485 interface Data transfer
20.	Recovery Ratio: 99.5%
21.	Repeatability: ±0.5%
22.	Requirement of Cooling water: $<18^0C$
23.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
24.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
25.	Warranty: The instrument **Automatic Kjeldahl Nitrogen Analyzer** including UPS should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
26.	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
27.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
28.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
29.	Validity of Quotation: Minimum 3 months.
30.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

12. Technical Specifications for Lab Fermenter

S No	Specification	Description
1.	**Total Capacity**	**1.0 Liters - 10.0 Liters**
2.	**Working Volume**	**250 ml to 7.5 Liters**
3.	**Type**	Whole Glass/ double jacketed vessel Table Top, Autoclavable type with SS 316L Flange.
4.	**Controls**	Micro controller/ PLC/TFT based Auto Temperature/ RPM/ pH/ DO_2/ Antifoam/ Air Flow etc
5.	**Display**	Minimum 5.7" Graphic TFT Display for microprocessor based systems and 7"/10" HMI Display for PLC based systems.
6.	**Top Flange/Head Plate**	SS 316L with 25 mm ports for pH/DO_2 and temp/heater/Sample Ports of 19mm, feed/ inoculation ports etc.
7.	**Condenser**	SS 316L heat exchanger fitted on the top of the flange with 0.22 micron PTFE filter for out gas and air filtration. Water inlet and out let for circulation of cold water to maintain the reaction volume.
8.	**Aeration**	Through Glass Metered needle valve Rota meter with ring type air Sparger with inbuilt/ external air pump/ compressor.
9.	**Inlet/Exhaust Filters**	0.22 micron hydrophobic PTFE filters from 50 mm dia to 2" capsule filters
10.	**Drive**	Top driven direct/ magnetic coupled motor having 20 to 1400 RPM for Microbial Fermentation mode and 20 to 500 RPM for Cell culture Applications
11.	**Impellers**	Removable type impeller with Six/ Four SS316L blades for Microbial applications or Marine type impellers for Cell Culture Applications and other on demand basis
12.	**Baffles**	Removable Type Two/ Four number Baffles provided in Microbial Culture vessels.
13.	**Agitation**	Variable speed control and Display on HMI/TFT.
14.	**Peristaltic Pumps**	One fixed speed peristaltic pump fitted on the control panel for the addition of feed or substrate,two fixed speed peristaltic pumps for Acid/Base dosing or additional pumps on demand basis.
15.	**Heating**	Inbuilt Electric heating element fixed / incapsulated in a tube on the top of flange/ heating blanket.
16.	**Temperature control**	PID control through microprocessor with TFT display / PLC with HMI having control accuracy of +0.2 Deg. C.
17.	**Software**	Data Acquisition/ Software with RS 232C Serial communication/USB Interface to PC for trends/graphs and tabular form DATA AQUISITION with inbuilt memory for data storage.
18	**Power Supply**	230V+ 10%,AC,50 Hz.
19	**UPS**	2.0 KVA or more UPS branded with at least 30 minutes back up to be quoted separately with offer
20	**Pre-installation requirement:**	Necessary pre-installation advice should be sent immediately after the placement of the order.

21	**Installation Commissioning and Application training:**	Free of cost at site for a group of technical staff/ students for operating the instrument.
22	**Warranty:**	The instrument Lab Fermenter including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
23	**Comprehensive Maintenance Contract (CMC):**	After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
24	**Installation in India:**	Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
25	**Performance:**	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
26	**Validity of Quotation:**	Minimum 3 months.
27	**Submission of Bids:**	Tender should be submitted in two parts- Technical and Financial.

13. <u>Technical Specification for Gel Doc System</u>

Sr. No.	Specification and Description
1.	System should have Image resolution of >4 mega pixels or more for resolving closely spaced bands on a gel.
2.	System should have pixel size of 4.65x4.65µm and Pixel Density (grey levels) of at least 4096 or more.
3.	System should have dynamic range of >3.0 orders of magnitude
4.	Imaging system should have Automatic capabilities with Application driven, user selected or recalled by a protocol.
5.	Should have 100 % repeatability via recallable protocols.
6.	System should have pre-calibrated focus for any zoom settings & sample height.
7.	Should have appropriate flat fielding correction automatically & consistently applied to image data for every application.
8.	Versatile system to support wide range of applications like- Fluorescent dye like Sybr green, Sybr safe, 2-D, 1-D, Dot Blotting, Nucleic acid detection , Quantization etc.
9.	System Should have Excitation source - Epi-white light and trans-UV are standard (wave length 302 nm included) (optional 254 nm and 365 nm lamp available); optional trans-white conversion screen and UV/blue conversion screen available
10.	System should have three illumination control modes, trans-UV, trans-white, epi-white
11.	System should be capable for imaging protein gels without staining and One pack of 10% fast

	running stain free gel solution sufficient to cast as many as 50 gels of 1.00 mm thickness should be provided to support stain free imaging.
12,.	Should have true 12 bit CCD camera.
13.	System can take max. Sample size 28 X 36 cm and maximum imaging Area 19.4 X26 cm.
14.	System should come with white light conversion screen.
15.	Should have motorized zoom lens- f/1.2, 12-75mm with numerical feedback value to reduce the experimental variation -Capable of Optimizing, saving, and quickly recalling the imaging acquisition settings
16.	Safe DNA Imaging without UV exposure- using the Blue Conversion screen to prevent damage from UV and preserve samples for downstream protein production.
17.	Reproducibly position or center the sample on the image platen by using gel alignment templates.
18.	Should come with 1 D analysis software with following features • Single mouse click from image capture to results and reports, very fast and efficient. • Should have comprehensive automated quantitative analysis of proteins & DNA samples in seconds. • Intuitive and well organized (efficient) selection of workflows based on applications • 3D viewer, Absolute and Relative quantitation • Should calculate precisely continuous focus curves that are consistently and automatically applied for every zoom position and sample height. No user intervention for focusing. All calculations are done at setup, once and for all image captures • Software should be multi user for multiple PC for use of multiple users and license free with lifetime free upgrades. • Auto exposure – 2 user defined modes (intense or faint bands) • Software should be single for imaging and analysis.
19.	Optional: ➢ A compatible branded PC Minimum i3,4GB Ram, 500 GB HDD,19inches falt color monitor, Windows 10 professional ➢ 1.0 kva Online UPS with 15 minutes back-up to be provided with the machine
20.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
21.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
22.	Warranty: The instrument Gel Doc System including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
23.	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
24.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
25.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
26.	Validity of Quotation: Minimum 3 months.
27.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

14. Technical Specification for Total Organic Carbon (TOC) Analyzer

Sr. No.	Specification and Description
1.	Limit of detection: 0.05 ppm
2.	Sample temperature range: 10-60°C
3.	Analysis Modes: TIC, NPOC, TC, TOC, (TC-TIC)
4.	Calibration stability: up to 6 months
5.	Result time should be less (Approx. 15-20 min.)
6.	Measuring Range should be up to 50, 000 ppm
7.	Maximum Relative Humidity: Up to 95%, non-condensing
8.	Drain: Gravity drain
9.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
10.	Installation Commissioning and Application training: Free of cost at site for a group of technical staff/ students for operating the instrument.
11.	Warranty: The instrument Total Organic Carbon(TOC) Analyzer including UPS should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
12.	Comprehensive Maintenance Contract (CMC): After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
13.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
14.	Performance: Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
15.	Validity of Quotation: Minimum 3 months.
16.	Submission of Bids: Tender should be submitted in two parts- Technical and Financial.

15. Technical Specification for Bio-Safety Cabinet

Sr. No.	Specification	Description
1.	Air Balancing	100%exhaust
2.	Inside Pressure	Negative Pressure
3.	Particle retention	0.3Micron&Above
4.	Inflow Velocity	100FPM±20
5.	Exhaust Velocity	80FPM±20
6.	Noise level	65decibelon“A”scale±5
7.	Ultraviolet lamp	Branded Smake–1No.
8.	Illumination	LED Fitting
9.	Prefilters	Attached
10.	HEPA filters	0.3 Micron and efficiency 99.97 %
11.	Exhaust Air Blower	Attached
12.	1No.Pressure Differential	Digital Gauge
13.	Front Panel	Polycarbonate Front door with Pneumatic Lift & Glove Port Arrangement and full air tight construction
14.	Glove Port	Gloves:6”dia,Gloves & Glove ports

15.	Overall Size	W1700xD750xH2050mm
16.	Working Size	W1200xD600xH600mm
17.	Material construction	The Cabinet and working table made from Stainless Steel with Matt finish. Working zone is lined with stainless steel material**.**
18.	Pre-installation requirement:	Necessary pre-installation advice should be sent immediately after the placement of the order.
19.	Installation Commissioning and Application training:	Free of cost at site for a group of technical staff/ students for operating the instrument.
20.	Warranty:	The instrument Bio Safety Cabinet should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
21.	Comprehensive Maintenance Contract (CMC):	After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
22.	Installation in India:	Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
23.	Performance:	Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
24.	Validity of Quotation:	Minimum 3 months.
25.	Submission of Bids:	Tender should be submitted in two parts- Technical and Financial.

16. Technical Specification for Aerosol Mass Monitor

Sr. No.	Specification and Description
1.	High precision pump-suction sensor.
2.	Laser Mie-scattering Principle.
3.	Working temperature ranges between 0-50^{0}C
4.	Storage Temperature Range; -20^{0}C to 60^{0}C
5.	High stability air pump imported
6.	User-defined five-channel particle size options
7.	Built-in temperature and humidity sensor
8.	TFT LCD large display with intuitive data
9.	Measuring Range 0-1000µg/m^3
10.	Resolution: 0.1µg/m^3
11.	Accuracy: ±10%
12.	Sampling Rate: 10s
13.	Laser emitter: 40mW, 780nm
14.	Point source location monitoring, fugitive emission monitoring.
15.	Hand held operation
16.	Five Mass Ranges (PM1.PM2.5, PM4, PM10 &TSP
17.	Rechargeable: Battery Charger/Adapter operated

18.	Data Storage: 2500 records
19.	Pre-installation requirement: Necessary pre-installation advice should be sent immediately after the placement of the order.
20.	Installation Commissioning and Application training:Free of cost at site for a group of technical staff/ students for operating the instrument.
21.	Warranty: The instrument Aerosol Mass Monitor including 3.5 KVA UPS should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
22.	Comprehensive Maintenance Contract (CMC):After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
23.	Installation in India: Detailed lists of users in India with contact details for the quoted equipment should be provided. Preferably, there should be atleast one same quoted equipment installed/ordered in India in last 5 years otherwise the tender will not be considered.
24.	Performance:Satisfactory performance of instrument and after sales service from existing users will be considered by the committee in evaluating the technical bid.
25.	Validity of Quotation:Minimum 3 months.
26.	Submission of Bids:Tender should be submitted in two parts- Technical and Financial.

17. Technical Specifications for Microarray System

1. The system should be fully functional and preferably open system with high speed microarray scanner having high resolution technology and high dynamic range, compatible programmable hybridization and latest version of software to support all functions. The latest version of the system should be quoted.

2. Microarray Scanner

a. The microarray scanner can perform efficient analysis at least two wavelengths and produce high quality data set from most of the commercially available and custom designed arrays.

b. The system should handle RNA and DNA arrays with high sensitivity and suited for various array-based applications like: transcriptome/expression profiling, micro-RNA profiling, comparative genomic hybridization, DNA methylation, cytogenetics (CGH + SNP), splice variants, SNP genotyping, Linkage analysis, etc. Availability of peptide arrays will be an additional application.

c. The arrays must offer high sensitivity and high specificity, while increasing resolution to map copy number aberration breakpoints, identify smaller gains and losses, and provide more comprehensive whole genome coverage

d. The cytogenetics arrays must contain probes in both the coding and non-coding regions of the genome, pseudo autosomal regions, and sub telomeric regions. The system must be able to process multiple samples in a single chip.

e. Should have at least 3µm or better pixel resolutions to produce high quality image and accurate relative quantization of signal levels over a dynamic range of at least four orders of magnitude.

f. System must be with confocal/non-confocal optic technology and preferably uses solid state laser as a source for excitation.

g. Should accept standard Glass microarray slides or Bead arrays or Quartz chip arrays.

h. System should be compatible with flourophores; Cyanine 3, Cyanine 5, Alexafluor etc.

The system should support image storage as single or multi-image in 16-bit TIFF and other user-selectable formats and permit easy export/import of images from other programs.

i. System should have auto focus option to facilitate efficient and sensitive scanning of slides / chips and have adjustable laser power to optimize signal output for a variety of sample types.

j. System should ensure maximum signal to noise ratio and highest collection efficiency.

j. System should have sensitivity at the level of 0.05 CPSM (Chromophore per Square Micron) or better.

k. It should provide latest version of powerful, integrated software which is widely recognized and accepted as international and industry standard. Software for data acquisition and analysis, should automatically read barcodes, find and place microarray grids, spot finding, reject/flag outlier pixels. Accurately measure feature intensities and ratios, automated calibrator system, normalization, analysis capabilities and real-time access to data at the time of scanning or acquiring the image.

l. Data workstations with latest features and fully compatible with the Instrument software must be provided along with the system required during scanning of the microarray slides and editing the features/signals for large data set.

m. Quoted system should support miRNA array to analyze human, mouse, rat or every miRNA for all species. It should support with arrays for Human, Plants and other microorganisms.

n. The system must support catalog and custom array designs that help in application such as – discovery of new pathways, disease associated marker identification, elucidation of drug targets and mechanism of its action, detection of the disease, study of disease prognosis and its classification and toxicological studies.

3. Software for Cyto& Expression Arrays

a. Should be able to offer streamlined workflow that is automation enabled for data upload and analysis. Contains optimized algorithms for accurate detection of copy-number changes and copy-neutral variations, including LOH and UPD.

b. The software must be able to suppress, classify, edit and annotate aberrations and report generation.

c. Licensed Software for Gene expression (Both m-RNA & mi-RNA) with Pathway analysis must be provided along with the machine. Freely downloadable software should not be quoted.

d. The provided software should be installable in at least three computers for an ease of simultaneous analysis of larger data size.

4. Arrays & Chips:

a. Microarrays and reagents for at least 24 samples for Gene Expression, along with 5-6 different custom designs, 16-20 or more arrays of each of these 5 designs, must be provided along with the system. The design for custom arrays can be provided at a later stage.

b. The Scanner manufacturer should preferably be the manufacturer of the catalogue and custom arrays and reagents to provide complete support.

c. Trained manpower needs to be provided for 3 years to run the array facility.

5. Sample Preparation and Quality Check

a. High throughput Instrument with Scalable sample throughput must be provided along with Scanner. The system must be microfluidics-based chip electrophoresis and should be able to run &analyze 96 samples in a single run.

b. All required licensed software's must be provided along with the Instrument. Reagents for at least 200 samples for both DNA & RNA must be provided.
c. Essential Accessory Instruments for Microarray validation (QPCR & PCR) should be provided with a 96-sample format, able to do at least 3 color multiplexing and a table top refrigerated microcentrifuge with rotors devoted to the system only.
d. The vendor should also quote nano-volume spectrophotometer for quantifying nucleic acids, proteins and cells with easy-application and user friendly software.

6. Hybridizer system

a. The hybridization system must be compatible with the microarray scanner quoted by the bidder.
b. Fully programmable hybridization system to minimize handling of microarray slides/chips during all steps of hybridization.
c. System should support advanced features, including variable and adjustable temperatures and speed.
d. Should possess wide operating temperature range
e. Should be supplied with compatible microarray chambers/cassettes to handle at least 12 or more microarray slides and suited for batch processing.
f. The system must offer variable rotation speed.
g. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
h. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected

7. Installation & Service Support:

a. Bidder should clearly specify the after-sale service & application support capabilities. The bidder should provide list of all pre-installation requirements. Warranty certificate needs to be on Principal's Letter Head.
c. A compatible 5KVA on-line UPS with at least two hour battery backup on full load to support whole microarray setup.
d. Bidder should provide at least two onsite trainings per year during the warranty/CMC period to demonstrate all the specified applications.
e. Bidder should also provide detailed list of users of the quoted system in India with contact details and users satisfaction from at least 3 Indian users (reputed institutions) in the last 3-4 years.
f. All the bidders must quote the complete system in the main offer as per specifications. Bidders quoting for an item asked in main specifications as optional are liable to face disqualification.
g. Required/customized furniture to place/ house the complete system with no vibration/ free from outside disturbance should also be supplied along with.

18. Technical Specifications For Cryostat

The Instrument should essentially have the following:

1. Freestanding cryostat with encapsulated, splash-proof microtome. Spacious, stainless-steel cryochamber with antiglare illumination. Easy to clean and disinfect.
2. Heated, removable sliding window. Stable, self-contained cryocabinet on casters. Low-maintenance microtome with cross roller guides. Reproducible, high-quality thin sections via stepper motor specimen feed.
3. Handwheel manually lockable in two positions. 8° XYZ specimen orientation with zero point reference.
4. Cryochamber temperature selection from 0 °C to -35 °C, adjustable in 1K increments.
5. Easy-to-clean, actively cooled specimen preparation zone with quick-freezing shelf for up to 10 specimens with max. temperature -45 °C.
6. Cryochamber may be defrosted manually and via automatic hot-gas defrosting once every 24 hours. The cycle may be programmed in 15-minute increments.
7. Defrost cycle: 12 minutes. Cryochamber and quick-freezing shelf can be defrosted manually and are equipped with an acoustic warning signal to prevent unintentional defrosting. Manual defrost cycle for chamber and quick-freezing shelf: 12 minutes.
8. Section thickness selection from outside the cryochamber. Sectioning thickness range: 0.5-100 µm, selectable in 0.5 µm increments from 0.5-2 µm; selectable in 1 µm increments from 2-20 µm; selectable in 2 µm increments from 20-50 µm; selectable in 5 µm increments from 50-100 µm
9. Total vertical specimen stroke: 58-59 mm Total horizontal specimen feed: 28 mm
10. Motorized coarse feed in 2 speeds: slow is max. 600 µm/s and fast is min. 900 µm/s.
11. Step function: Minimum 20 µm each time the key is pressed at slow coarse feed speed.
12. Control panel with membrane-protected buttons and locking function. Self-explanatory symbols for all essential functions and displays.
13. LED display for cryochamber temperature, actual time, defrost time, and section thickness selection. Visual indication of specimen stop positions (Front/Home).
14. Manufactured in compliance with c-CSA-US and CE standards. CFC-free.
15. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.
16. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected
17. Accessories should be quoted along with the instruments-4 Specimen discs- 25 mm, 4 Specimen discs 30 mm, 1 bottle of freezing medium, 1 Section waste tray, 1 Storage shelf, right 1 Storage shelf, left ,1 Brush shelf, 1 Cover for freeze shelf, 1 Transfer block for specimen discs, large, 1 Tool set.

19.Technical Specifications for Automatic Rotary Microtome

The instrument should essentially have the following:

1. Fully automatic microtome with stepper motor driven specimen feed
2. Vertical and horizontal cross roller bearing mechanism to ensure accurate reproducibility of section thickness.
3. Section thickness selection from 0.5µm to100 µm.

4. Section thickness range : 0.5µm- 100 µm increment with 0.5µm-2 µm in 0.5 µm increment, 2 µm -20 µm in 1 µm increment, 20 µm -50 µm in 2 µm increment, 50 µm – 100 µm in 10 µm increment.
5. Trimming thickness setting from 1 µm to 600 µm or more with step trim function.
6. Should have specimen retraction at 5 - 100 µm in 5 µm increments; can be turned off.
7. Should have slow forward and backward coarse feed speed at 300 µm/s or better, fast forward speed at 800 µm/s or better
8. Microtomes should have rapid specimen exchange with fast homing position and programmable Memo position at fast backward speed at 1800 µm/s or better
9. Motorized sectioning speed of 0.0 to 420 mm/sec operated.
10. Instrument should be supplied with external foot switch for automatic operation.
11. Microtome should have at least three motorized sectioning modes as single,continuous and step modes and two manual sectioning modes as rocking mode and conventional manual sectioning.
12. Microtome should have facility for adjusting sectioning speed while motorized sectioning is in progress.
13. Should have rocking mode action of sectioning to minimize the risk of developing repetitive motion disorders (RMD).
14. Hand wheel should have force balance system which makes rotating the hand wheel extremely smooth and light weighted and avoids microtome vibrations.
15. The instrument should have personalized coarse feed hand wheel / motorized coarse feed through control panel for user selectable course feed wheel / key and Emergency stop knob on the microtome.
16. Horizontal feed of **24 mm ±1 mm** via stepper motor and vertical stroke length of 70 mm or more
17. The instrument should have antistatic waste tray to reduce contamination and provides unmatched efficiency through shortened cleaning times.
18. Hand wheel with force balance system should have facility to center the while operating in automatic mode.
19. Specimen orientation of 8 degree both horizontally and vertically with Zero reference indications.
20. Microtome should be supplied with both high & low profile blade holders.
21. Section counter and section thickness totalizer and all controls on the instruments with external control unit.
22. Disposable blade holders with lateral displacement for both high and low profile blades.
23. The instrument should have personalized coarse feed hand wheel / Motorized coarse feed through control panel
24. Microtome should have user selectable Coarse feed wheel / Motorized coarse feed through control panel turn direction clockwise or counter-clockwise on personalized coarse feed hand wheel / Motorized coarse feed through control panel
25. Microtome should be supplied with removable large top try surface area / recessed area allows placement of objects that require a flat surface.
26. Speed control should be controlled by knob / slider on the external and internal control panel through the cutting window for enhanced efficiency.
27. Instrument should be supplied with universal cassette clamp, Standard Specimen Clamp.
28. The instrument should be EC or US –FDA registration or CSA Certificate.
29. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

30. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.
31. 2 KVA online UPS to be supplied along with automatic microtome.

20. Technical Specification for Ultra-Low Temperature Freezer

The system should have the following essential requirements,

1. The system should be able to give Ultra-Low Temperature of at least minus (-) 86^{o}C.
2. Its External dimensions should be about W770 mm x D870 mm x H1990 mm. and the Internal dimensions should be W630 mm x D600 mm x H1380 mm.
3. Its effective capacity should be at least 519L or more.
4. The Interior and Outer door should be painted steel. Its Inner door should be ABS resin panel with stainless frame, 2 doors.
5. The shelf should be of Stainless steel, 3 shelves (adjustable), Inner dimension; W608 mm x D533 mm, Load; 50 kg/shelf.
6. Its Access port should be 17 mm diameter, 3 locations (back, 2 bottoms)
7. The insulation of the Ultra-Low Temperature Freezer should be Vacuum insulation panel + Rigid polyurethane foamed-in place.
8. It should have two types of Compressors, (a) compression: Hermetic type, Output; 1100W and (b) compressor: Hermetic type, Output; 1100w.
9. The Evaporator should be Tube on sheet type.
10. Its Condenser should be Finless tube type.
11. The Freezer Refrigerant should be HFC mixed refrigerant.
12. The Temperature controller should be Microcomputer control system. And the Temperature display should be Digital display.
13. The Ultra-Low Temperature Freezer Thermal sensor should have Platinum resistance (Pt 1000Q)
14. The Alarm should be for High temp. Alarm, Low temp, alarm, Power failure alarm, Door alarm, Sensor abnormality, Fan motor abnormality, Compressor temp abnormality & Cooling circuit abnormality.
15. The Remote alarm contact should be Allowable contact capacity: DC 30 V, 2A.
16. The Ultra-Low Temperature Freezer Battery should be Nickel-metal-hydride battery, DC 6 V, 1100 mAh, Auto-recharge (5HR-AAC).
17. The Ultra-Low Temperature Freezer Weight should be around 320kg/328kg.
18. The Ultra-Low Temperature Freezer Voltage booster should be Built-in.
19. The essential Ultra-Low Temperature Freezer Accessories, like 1 set of key, 1 scraper, 1 stick for air intake port cleaning, etc. should be part of the main quote.
20. The Ultra-Low Temperature Freezer Cooling performance should be -80^{o}C at the center of the chamber (ambient temperature; 30^{o}C, no load).
21. The Ultra-Low Temperature Freezer Temperature control range should be -50^{o}C to -86^{o}C
22. The Ultra-Low Temperature Freezer Power voltage should be AC 220 V/240V.
23. The Ultra-Low Temperature Freezer Rated frequency should be 50Hz/60Hz.
24. The Ultra-Low Temperature Freezer Rated power consumption should be 1140W/1400W. The Maximum pressure should be 2920kPa.
25. The Ultra-Low Temperature Freezer components, like Temperature recorder, Recorder fixing, Interface board, Inventory rack & Backup cooling kit, should be part of the main quote.
26. The quote should have an appropriate Voltage stabilizer and a battery operated emergency power supply (inverter) with at least 1h back-up in case of power failure.

i. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system

consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

j. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected.

27. Any other add-on accessory/ component be quoted as optional.

21. Technical Specification for Behaviour and Activity Test System

(a) Specification for Auto –Track/Opto-Varimex-5 Open Field Animal Activity Meter

The instrument should essentially have the following

1. Activity meter should be designed for the Open Field Anxiety and Exploratory Tests.
2. System should be using latest technology to quantify loco motor activity and trace the animal's path for behavioral analysis.
3. Systems can support up to 16 stations on a single PC.
4. System should have four cages, and sensors, brackets, interface, and Windows software.
5. System should have ability to record the interruption of beams along the horizontal axes (X & Y) provide coordinates that identify animal location.
6. Software should be able to records these coordinates for later playback and analysis.
7. System can be adapted to perform automated measurements for other tests, such as the Contextual Place Preference Test, Hole Poke Exploratory Test, and Light/Dark Transition Test.
8. The system should record distance traveled, resting time, stereotypic time, ambulatory time, burst of stereotypic time,horizontal and ambulatory beam breaks, raw data storage (GLP compliant), validation protocols and Re analysis data.
9. The instrument should be complete in itself with all the essential attachments, UPS, PC/MAC compatible software, standard i5 laptop, etc. Any additional accessory, required for upgradation or optional attachment be quoted separately.
10. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

11. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected

(b)Technical Specifications for Rotarod For Rat & Mice

The system should have the following essentials,

3. Rotarod should be capable of testing up to four animals simultaneously for their ability to maintain themselves upright on a rotating rod.
4. There should be an option to select accelerating or constant speed mode of operation as well as a slow speed waiting mode before acceleration takes place.
5. Speed and acceleration rate should be programmable.
6. An animal fall should be detected by infrared photo-cells.
7. Software should allow programmed intervals for speed changes, even spinning direction, should be programmed into a specific protocol of the user’s design.
8. It should allow monitoring of looping behavior; length of trial and number of loops.

9. Data should be generated in a CSV format that can be easily opened by most statistical analysis programs.
10. Number of Exercise Lanes should be 4.
11. Rotarod Spindle Speed Range should be 0 - 99.9 RPM
12. Acceleration Increments should be 0.1 RPM per second. to 20.0 RPM per second.
13. Animal's absence from rod assembly should be monitored by Scanning infrared beam diagnostic for GLP validation.
14. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

15. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected
16. The instrument should be complete in itself with all the essential attachments, UPS, PC/MAC compatible software, standard i5 laptop, etc. Any additional accessory, required for upgradation or optional attachment be quoted separately.
17. (32) sensors.
18. The software should have facility to record the passive rotation time, running duration, speed at the time of fall and distance travelled with facility for self-check and

(c) Specifications for Grip Strength Meter

The system should have the following essentials,

1. System should assess neuromuscular function by sensing the peak amount of force an animal applies in grasping specially designed pull bar assemblies.
2. System performance should be with precision force gauges in such a manner as to retain the peak force applied on a digital display,the values may be either recorded manually or sent to an attached computer via USB.
3. System should support Fore and hind limb assessments.
4. System readings must be obtained in pounds, kilograms, or newtons all values accurately within +/- 0.25% of full-scale capacity,force gauges are offered in 0-1Kg and 0-5Kg ranges.
5. System defines Objective assessment of neuromuscular performance specially designed pull bar assemblies,simple operation,selectable force units.
6. System should support standard pull bar assemblies are offered for rats and mice.
7. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

8. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected
9. The instrument should be complete in itself with all the essential attachments, UPS, PC/MAC compatible software, standard i5 laptop, etc. Any additional accessory, required for upgradation or optional attachment be quoted separately.

(d) Technical Specification Multi-Configuration Behavior Video tracking and mazes complete system for small animal

The system should have the following essential requirements,

1. Multi-configuration behavior tracking equipment for small animal is essential for study of different conditions, like anxiety, locomotors activity, depression, memory learning and stress response from small animal in experimental condition.
2. Multi-configuration behavior tracking system setup should consists of
   Open field enclosure, hole board insert, novel objects, light/dark box enclosure, conditioned place preference enclosure.
3. Multi-Configuration Behavior tracking equipment should be a completely automated system designed to make behavioral tracking convenient and affordable for a range of behavioral tests.
4. It should be a multiple tests system with a single base consists of behavior trackingSoftware, digital interface device, universal Base Plate with IR Photo beam Array, USB CMOS Camera and Camera Accessories including locally made camera stand.
5. Camera should be B&W USB 2.0 CMOS with separate lens vari-focal, 2.7-13.5mm and 15 ft USB 2.0 Male to Mini cable.
6. IR photo beam array should provide a 'curtain' of photo beams and should be used to detect when an animal rears and also be as a movement detector for generation of reliable movement 'counts' in circumstances.
7. IR photo beam array should plugs directly into digital Interface device within 100 cm for rat, maximum working distance is 50cm separation with 12.5mm space between beams (across the array) and also with option for 40cm for mice
8. Tracking software should be flexible and can be used to track the behavior of rodent in any types of mazes with as many as sixteen pieces of camera.
9. The software should have the facility to create password protected individual id to comply with GLP and the save data should also be password protected.
10. It should support an array of cameras like USB digital cameras, fire wire cameras, DV cam coder, and CCTV camera, or analog pre-recorded video.
11. It should have the ability to track animal head, center and tail and can make an orientation between these three.
12. It should have the facility for sequence setting to detect specific transitions of the animal with in the apparatus and also have the facility to identify specific location in the apparatus.
13. System should automatically score over hundred different parameters like total distance travelled, average speed, mobile, immobile time and number of episode, total active, inactive time and episodes, longest, shortest active & inactive episodes, no of line crossings, absolute turn angle, total distance travelled by animal's head, animal body clock wise and anti-clockwise rotation, visited zone list, number of rearing episode, grooming of the animal and Overall: distance, speed, direction, Zones: Latency to enter, time in, distance from.

Mobility: Latencies, time mobile, mobile bouts, Sequences: Rotations, visit to zone in an order. Behaviors: Counts, durations, frequencies, sequence of zone entry,

14. System should be able to perform statistical analysis of the test and view results in text, graph or spread sheet formats, with up-gradation free of cost for life time.
15. System should have the capacity to add or delete animals and option to amend the experimental setup during experiment without disturbing the protocol setup.
16. It should have the ability to start (or end) the tests in all apparatus at the same time and can automatically generate track plotting & occupancy plotting (Heat map) of test

& control subjects

17. The system should easily be connected and controlled to a variety of devices commonly used in behavior test like levers, photo-beam cells, pellet dispensers, shockers, lamps and speakers.
18. **Warranty:** The instrument (name) including UPS quoted for it should be under on site Comprehensive warranty for three (3) years from the date of installation by the OEM or its representative. Comprehensive warranty should explicitly include all spare parts and system consumable part. Any repair work or replacement of spares needs to be done on site, the manufacturer must confirm this in their quotation.

19. **Comprehensive Maintenance Contract (CMC)**: After the completion of 3 years OEM warranty, two years extended CMC must be quoted without which the tender will be rejected
20. The instrument should be complete in itself with all the essential attachments, UPS, PC/MAC compatible software, standard i5 laptop, etc. Any additional accessory, required for upgradation or optional attachment be quoted separately.

Annexure- 12

PROFORMA OF PERFORMANCE BANK GUARANTEE

In consideration of the Registrar, Jiwaji University, Gwalior (hereinafter called the "Client") having offered to accept the terms and conditions of the proposed agreement (hereinafter called the "said

Agreement") between Registrar, Jiwaji University, Gwalior and M/s..... (hereinafter called the "said Contractor") for the work of Catering Services having agreed to production of an irrevocable bank guarantee for Rs._____ (Rupees _____ only) as a security / guarantee from the contractor for compliance of its obligations in accordance with the terms and conditions in the said agreement.

We _____ (hereafter referred to as the "Bank") hereby undertake following:

1. We undertake to pay to the Client any money so demanded not withstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under bond shall be a valid discharge of our liability for payment thereunder, and the contractor(s) shall have no claim against us for making such payment.
2. We further agree that the Guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement, and it shall continue to be enforceable till all the dues of the Client under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, or till the Client certifies that the terms & conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges this guarantee
3. We further agree with the Client that the Client shall have the fullest liberty without our consent , and without effecting in any manner our obligations hereunder, to vary any of the terms & conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Client against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Client or any indulgence by the Client to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
4. This Guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
5. We lastly undertake not to revoke this Guarantee except with the prior consent of the Client in writing.
6. This guarantee shall be valid up to …..... unless extended on demand by the Client Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs._____ (Rupees _____ only) and unless a claim in writing is lodged with us under this Guarantee shall stand discharged.
   Dated the _____ day of ____ for _____

Signature of the authorized officer of the Bank

Name & Designation of the officer

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

FORMAT OF CONTRACT AGREEMENT

(On Non-judicial Stamp Paper as per m.p Govt. rules)

THIS AGREEMENT made the ..... day of ....., 2018 Between Registrar, Jiwaji University, Gwalior (hereinafter "the Client") of the one part and M/*s* _____ _____ (hereinafter called "the Contractor") of the other part:

WHEREAS the Client is desirous that certain services viz. Supply Catering Services in the tender reference no. _____ Dated _____ and has accepted a bid by the Contractor for the performance services for the sum of *Rs.* _____ */- (Rupees* _____ *only)* (hereinafter called "the Contract Price") and supply of consumables as per rates given in the financial bid of its tender.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to, and they shall be deemed to form and be read and construed as part of this agreement.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

a) The Letter of Acceptance issued by the Client.
b) The supplier's bid including enclosures, annexure, etc.
c) Tender document along with all enclosed documents.
d) Any other document listed in the supplier's bid and replies to queries, clarifications issued by the service provider, such confirmations given by the bidder which are acceptable to the contractor and the entire Addendum issued as forming part of the contract.

3. In consideration of the payments to be made by the Client to the Contractor as hereinafter mentioned, the Contractor hereby covenant with the Client to provide, the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Client hereby covenants to pay the Contractor in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the goods and services which shall be supplied / provided by the Contractor are as under.

Sl. No	**Brief Description of Services**	**Contract Duration**	**Total Price**	**GST tax in %**	**Total value inclusive of GST tax**
1					

IN WITNESS where of the parties here to have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the Said _____ (For the Client) In the presence of .....

Signature

Name

Address

Witness 1. 2.

Signed, Sealed and Delivered by the

Said _____ (For the Contractor)

In the presence of .....

Signature

Name

Address

Witness 1. 2.

Annexure -14

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Single Crystal X-ray Diffractometer	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Benchtop NMR Spectrometer	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

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   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of HPC Cluster	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

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   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of SEM-EDAX	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

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4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of PPMS	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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4. Telephone No and e-mail ID. :-

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COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of GC-MS	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

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COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of CHN Analyser	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of AAS	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

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2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Automated Nucleic Acid Extractor	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Real Time PCR	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Automatic Kjeldahl Nitrogen Analyser	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

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2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Laboratory Fermentor	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Gel Doc System	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Total Organic Carbon System	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Biosafety Cabinet	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Aerosol Mass monitor	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Microarray System	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

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4. Telephone No and e-mail ID. :-

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COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Cryostat	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

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3. Name of the Proprietor / Partner / Director of the Firm :-

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4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Automatic Rotary Microtome	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

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4. Telephone No and e-mail ID. :-

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COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Ultra-Low Temperature Freezer (-80^0C)	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)

JIWAJI UNIVERSITY, GWALIOR

COMMERCIAL BID (ONLINE) FOR PURCHASE OF Equipments

1. Name of the Firm :-

   ……..

2. Address of the Firm :-

   ……..

3. Name of the Proprietor / Partner / Director of the Firm :-

   ……

4. Telephone No and e-mail ID. :-

   ……

COMMERCIAL BID FORM (e-Bid)

Sr. No.	Equipment	Qty.	Rate / Item	
			Price in Rs./Foreign Exchange Equivalent (Inclusive of GST & All Taxes)	
			In Figure	In words
1.	Supply & Installation of Behaviour & Activity Test System	01		

(SIGNATURE OF THE BIDDER WITH NAME & SEAL)