



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

Notice Inviting Tender (NIT)

The Central University of South Bihar invites sealed tenders for the Supply & Installation of “**Laboratory Equipments**” for Physics Lab. at CUSB Panchanpur, Gaya from original manufactures/ authorized dealers/ distributors. The last date and time of submission of tender document is **20/02/2020 by 4:00 PM**. The detailed tender document is available on the University website www.cusb.ac.in. The cost of tender form is Rs. 500/- and can be purchased by payment in the form of Demand Draft, from Central University of South Bihar. The tender forms can also be downloaded from University website and be accompanied by DD of Rs. 500/- in favour of ‘Central University of South Bihar’, payable at Gaya. Duly filled in tender is to be sent by Speed Post/ Registered Post/ By Hand (to be dropped in Tender Box) on following Address: -

To,
The Registrar
(Tender Document)
Central University of South Bihar
SH-7, Gaya- Panchanpur Road,
Village- Karhara, Post- Fatehpur
P.S- Tekari, District- Gaya (Bihar), PIN- 824 236

Email- registrar@cub.ac.in

Website- www.cusb.ac.in

Contact – 0631-2229519

CPP Portal web site: www.eprocure.gov.in/epublish/app/epublish/app

Index for Tender Form

Sl. No.	Items	:	Details
1.	Tender Notice No. and date	:	CUSB/PSD/PHY/TENDER/26/2019-20, Dated: 30/01/2020.
2.	Name of work	:	Tender Bid Document for the Supply & Installation of “ Laboratory Equipments ” for Physics Lab at Central University of South Bihar.
3.	Tender Fee	:	Rs. 500/- in form of Demand Draft
4.	Earnest Money Deposit	:	Earnest money as mentioned in NIT in shape of Demand Draft drawn in favour of Central University of South Bihar, payable at Gaya from any scheduled Bank of amount as per Annexure ‘A’ .
5.	Start of submission of Bids	:	30/01/2020
6.	Last date and time for Receipt of Bids	:	20/02/2020 by 4:00 PM
7.	Date and Time of opening of Technical Bids	:	21/02/2020 by 2:30 PM.
8.	Place of opening of Bids	:	CUSB Gaya.



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Name of the work: Tender Bid Document for the Supply & Installation of “**Laboratory Equipments**” for Physis Lab at Central University of South Bihar, Gaya (Bihar).

Sold to Sri/Smt./M/s.

On payment of Rs. 500/- (Rupees Five Hundred only)

Vide D.D. No. Bank & Branch dt.....

Registrar

I undertake to abide by the terms and conditions as stipulated in the detail tender call notice and conditions of contract.

Signature of the contractor

For Office Use only

- | | | |
|--------------------------------------|---|--------------------------|
| 1. Total Nos. Corrections | : | |
| 2. Total Nos. of Overwriting | : | |
| 3. Total Nos. of Pages | : | |
| 4. Earnest Money Deposit in shape of | : | |
| 5. Copy of S.T.C.C | : | Furnished/Not Furnished |
| 6. Copy of I.T.C.C./PAN | : | Furnished/ Not Furnished |
| 7. Any other enclosure | : | |

Registrar
Central University of South Bihar



Supply & Installation of “**Laboratory Equipments**” for Physics Lab at Central University of South Bihar, Gaya.

Technical Bid

Note: This is to be kept in **Envelope “B”** sealed and it should be written on envelope that Technical Bid for **Tender for the Supply & Installation of “Laboratory Equipments”** for Physics Lab at Central University of South Bihar Gaya.



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NOTICE INVITING BIDS

The Central University of South Bihar (CUSB), invites sealed tender in two bid system for the Supply & Installation of “**Laboratory Equipments**” for Physics Lab at Central University of South Bihar, Gaya (Bihar) from the original manufactures/authorized dealers/ distributors. Details are as follows:

Sl. No	Description of Goods	Earnest Money to be Deposited	Last date & time of submission of Tender document	Time & date of opening of Tender	Time allowed for completion of delivery and installation
1.	Supply & Installation of “ Laboratory Equipments ” for Physics Lab at Central University of South Bihar, Gaya.	Item Wise as mentioned in Annexure ‘A’	20/02/2020 by 4:00 PM	Shall be intimated on University website.	30 days after issue of Purchase Order/Work Order

2. The tender must be accompanied by a Demand Draft for the amount mentioned in **Annexure “A”** in Indian Rupees only (alongwith list of quoted items with EMD details), on a schedule bank drawn in favour of Central University of South Bihar, payable at Gaya as Earnest Money for the above tender.

3. **Eligibility Criteria (details to be submitted in Annexure “B”)**

3.a. **Financial**

The Firm should have average annual financial turnover of 1 crore for equipments equal or above cost Rs. 25 lakh and turnover Rs. 25 Lakh for equipment less than 25 lakh during the preceding last 03 consecutive financial years starting from F.Y. 2018-19 to know the financial capability of the firm and supply credentials.

3.b. **Physical**

Three similar supplies in Central Government/ State Government/ PSU/ Universities/ Reputed Higher Educational Institutions costing not less than 40% of the cost or two similar supplies costing not less than 60% of the estimated cost or one similar supplies costing not less than 80% of the estimated cost in the last 3 years ending on the last day of the month previous to the one in which the tenders are invited.

4. **Sealed tender documents duly signed on all pages** are required to be delivered at Central University of South Bihar, by Registered Post/ Speed Post/By Hand (to be submitted in Tender Box) to reach on or before **20/02/2020 by 4:00 PM**. The Technical Bids will be opened at CUSB, Gaya in presence of the Tenderers or their authorized representatives who wish to attend.

5. The tenderer shall quote for the materials to be supplied as per detailed specifications as given in the tender document, at Gaya.

6. For any clarification and doubt related with the Tender, Tenderers should email their queries to registrar@cub.ac.in.

7. The tender shall be submitted in three separately sealed envelopes marked as “A”, “B”, & “C”. The language used shall be English. In case any information is given in foreign language, then translated (in English) copies of those pages must be enclosed, failing which the tender will be disqualified.

8. ENVELOPE 'A' (Earnest Money & Tender Cost)

The tender shall be accompanied by the cost of the tender document for Rs. 500/- (Indian Rupees five hundred only) in the form of Demand Draft failing which the tender will not be accepted. Tender must also be accompanied by earnest money as mentioned in **Annexure 'A'** in the form of Demand Draft in favour of Central University of South Bihar, payable at Gaya executed by any Scheduled Bank. The Demand Draft towards Earnest Money & cost of tender document will be placed in sealed **Envelope 'A'**.

- 8.a. The tender cost and EMD are not required to be submitted by bidders who are exempted in terms of MSME, Govt. of India guidelines. However, they are required to furnish requisite certificate in this regard issued by the Competent Authority.

9. ENVELOPE 'B' (Technical Bid Document)

- 9.i. Those Tenderers, who are not the manufacturer but are authorized by the original manufacturer to supply the goods, should establish their credentials by giving valid documentary evidences of similar supplies to have been executed in India.

9.ii. Checklist for Envelope 'B'

- 9.ii.a. Copy of registration of GST.
- 9.ii.b. Copy of Income Tax Permanent Account Number.
- 9.ii.c. Copy of Trade License, Factory License/Excise Registration.
- 9.ii.d. Copy of Memorandum and Article of Association, Certificate of Incorporation, Partnership Deed, Registration Certificate issued by the Registrar of Firms etc.
- 9.ii.e. Copy of Authorization for Participation in subject bid (not required in case of Proprietorship firm).
- 9.ii.f. Copy of Dealership/ Distributorship Authorization Certificate.
- 9.ii.g. Copy of Small Scale Unit/ MSME/ NSIC Registration under relevant items (if registered).
- 9.ii.h. All pages of tender document including various sections and Annexure 'A', except priced bid duly signed / sealed by the Tenderer.
- 9.ii.i. Any product manual, credentials etc.

10. Envelope 'C' (Financial Bid Document)

- 10.1. The **Envelope 'C'** shall contain the tender documents and information related to the schedule of quantities quoting the rates per Unit/Price etc. of the item pertaining to the Financial Bid on the Financial Bid document, issued by CUSB, along with the tender document.

The Financial Bid should be submitted separately in separate envelope clearly mentioning the Financial Bid is submitted on top of the Envelope.

- 10.2. All columns shall be duly filled in with specific information on the cost involved.

- 10.3. The rates for the items shall be quoted in Indian Rupees only.

***NOTE** The Tenderer should clearly mention in all the three envelopes (i.e. A, B and C) clear description of the items for which the offer is being quoted. If any discrepancy is observed the offer would be treated as non-responsive and would be rejected out rightly.

11.
 - **Envelope 'A'** (Earnest Money & Tender Cost),
 - **Envelope 'B'** (Technical Bid Document), and
 - **Envelope 'C'** (Financial Bid Document), shall be in separate sealed envelopes, each marked as "**Envelope 'A'**, **Envelope 'B'** and **Envelope 'C'**", respectively.

 - All the three envelopes shall be submitted together in another big envelope sealed and super-scribing thereon **Tender for Supply & Installation of "Laboratory Equipments"** for Physics Lab alongwith **Tender Number and Name of the Equipment quoted**.

 - The envelope should be addressed to, The Registrar, (Tender Document) Central University of South, SH-7, Gaya - Panchanpur Road, Village - Karhara, Post- Fatehpur, P.S. Tekari, District - Gaya (Bihar) PIN - 824236.

 - The envelope marked **Envelope 'B'** of only those Tenderers shall be opened, whose earnest money & tender cost are placed in the **Envelope 'A'** and found to be in order. In case of waiver of the charges, relevant documents shall be submitted in **Envelope 'A'**.

12. The Tender Evaluation Committee will evaluate the Technical Bids and is fully authorized to reject any incomplete tender or on its satisfaction that the requirements are not met for the complete need of the CUSB with regard to the Committee. The decision of the Tender Evaluation Committee shall be final. Only those Technical Bids cleared by the Tender Evaluation Committee shall be eligible for consideration of Price Bid. Those successful Tenderers for whom the **Envelope 'C'** (Price Bid) is to be opened shall be duly intimated.

13. **Clarification on Tender Documents**
 - 13.1. During evaluation of tenders, the University authorities/ committee may at its discretion ask the Tenderer for any clarification(s) if so deemed fit. The request for clarification and the response shall be in writing. However, the Tenderer is not permitted to alter the price(s) furnished in the Price Bid (**Envelope 'C'**).

 - 13.2. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price (i.e. obtained by multiplying the unit price and quantity), the unit price shall prevail and the total price shall be corrected. If the supplier does not accept the correction of errors, its tender will be rejected. If there is a discrepancy between words and figures, the amount in words will prevail.

14. The amount of Earnest Money Deposit (EMD), in case of successful Tenderer, shall be refunded on successful completion of delivery/installation. However, EMD of unsuccessful Tenderers will be refunded after the award of the contract to the successful Tenderer.

15. The CUSB, does not bind itself to accept the lowest or any other tender, and reserves the authority to reject any or all the tenders received without assigning any reason. Tenders not in compliance with any of the prescribed conditions or incomplete in any respect or in presence of any correction not duly dated, initialed by the Tenderer will be liable to be rejected. However, the final decision for accepting or rejecting any or all tenders will be in the sole discretion of Vice Chancellor, CUSB.

16. Tender shall remain open for acceptance for a period of **90 days** from the date of opening of the tenders. If any Tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to CUSB, then CUSB, shall without any prejudice to any other right or remedy, be at liberty to forfeit full earnest money, absolutely. The decision of Vice Chancellor, CUSB in this behalf shall be final and binding on the Tenderer.

17. The notice Inviting tender shall form a part of the contract document.

18. No additional conditions from the Tenderer shall be acceptable. The tenders having any additional conditions will be summarily rejected without assigning any reason.

Date:
Place:

Signature of the Tenderer



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TECHNICAL BID PROFORMA

NIT No. :		CUSB/PSD/PHY/TENDER/26/2019-20, Dated: 30/01/2020			
Sub.: Supply & Installation of "Laboratory Equipments"					
1.	Name of the Organization				
2.	Head Office / Registered Office				
	Telephone No/mobile No.				
	Fax No.				
	Email				
	Web site (if any)				
	Date of Establishment				
	Branch Office in Gaya , if any				
	(Provide Complete Address)				
	Telephone No.				
	Fax No./Email				
3.	Name of Chief Executive/ Proprietor / Partners with Designation				
	Telephone No./Mobile No.				
	Fax No./ Email				
4.	Name of Contact Person				
	Telephone No./Mobile No				
	Fax No./Email				
5.	Type of Organization		Certified Documents to be enclosed		
a.	Proprietary		Trade License		
b.	Partnership		Partnership Deed, Trade License		
c.	Private Limited Company		Memorandum of Article		
d.	Public Limited Company		Certificate of Registration		
e.	Public Sector		Trade License		
6.	Nature of Business (tick the relevant)				
Manufacturing			Service		
			Dealership		

Stockiest		Indian Agent		Indian Branch Office	
Others Pl. Specify					
7.	Class / Type of Product / Materials Manufactured / Sold / Serviced/ Fabricated				
Scientific Equipment		Electronics		Lab Consumables & Chemicals	
Electrical Items		Computer Peripherals		Computers	
Laboratory Equipments		Office Automation Product		Electrical Works	
Sport Materials		Water Coolers		Air-conditioners	
AV Equipments		Boards		Other, please specify.....	
Audited Annual Turnover during last 3 years (Rs. In Lakhs) (enclose Chartered Accountant's certification & Income Tax Return Copy)					
Year		Rupees (in Lakhs)		Annexure (Number)	
2018-19					
2017-18					
2016-17					
8.	Commercial Information (enclose Attested Copy wherever Applicable)				
S. No.	Information	Details		Annexure (Number)	
a.	GST Registration Number				
b.	Excise Registration Number Trade / Factory License Number				
c.	PAN No.				
d.	Details of Registration Certificate with DGS&D/NCCF				
e.	SSI/NSIC/MSME Certificate				
f.	Current dealership agreement with Principal Letter No. / Date / Valid upto				
g.	Relevant IISI/ SO Certificate, if any				
h.	<u>Bank Details :</u> Account No.				
i.	Name of Bank & Branch				
j.	IFSC Code				
k.	Details of Tender Fee	Amount:	DD No. & Date	Name of the issuing Bank & Branch	
l.	Details of EMD	Amount:	DD No. & Date	Name of the issuing Bank & Branch	

m.	Details of Previous Supply in Govt. Organisations/ Govt. Educational Institutions (Enclose Supply order & Performance report. If required enclose separate sheets) Enclosures -	Name of the organization	Item Supplied / Qty.			Total Value (Rs in lakhs)
9.	MSME Entrepreneur	Comment				
9.1.	Is the bidder MSME Entrepreneur	Y/N				
9.2.	If yes, the category (GEN/OBC/SC/ST/Women)	GEN	OBC	SC	ST	WOMEN
I/ We hereby give an undertaking that the information provided are true to the best of my knowledge and belief. If anything found to be false at any stage my tender will be liable to be rejected and EMD amount will be forfeited.						
Signature of authorized representative:						
Date:						
10.	Note					
10.1.	Separate information sheet may be provided for item (s) in case space provided is not adequate.					
10.2.	Affidavit in the enclosed format on Non Judicial stamp paper duly attested by Magistrate/Notary shall also be furnished by the bidder.					



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Check List

Document to be submitted with Tender

S. No.	Particular	Yes / No	Annexure No
	Envelope - A		
1.	Tender Fee (DD)		
2.	EMD Cost (DD)		
3.	Exemption of EMD (Requisite Certificates)		
	Envelope - B		
4.	ITR of last 3 Years		
5.	Audit Copy of Last Three Years		
6.	Experience of same work (Work / Supply Order etc.)		
7.	GST Registration		
8.	PAN Card		
9.	Duly Filled Tender Document (All the pages should be signed & stamped)		
10.	Dealership / Distributor / Authorization Certificate		
11.	Trade/Factory License		
12.	ISI/ISO Certificate		
13.	Non – Blacklisting Affidavit / Undertaking		
14.	Any product manuals/ credentials etc.		
	Envelope - C		
15.	Price Bid / Financial Bid		

N.B.

1. The Bidder ensure that all the documents/confirmations required as per the tender document are enclosed in the tender and no column is left blank. It is the responsibility of bidder to ensure furnish all required documents, as per the tender document.



GENERAL CONDITIONS OF PURCHASE

1. Definitions

- 1.1. In this Purchase, the following terms shall be interpreted as indicated.
- (a) "The Order" means the agreement entered into between the Purchaser and the Supplier including all the attachments and appendices and all documents incorporated as per notification of award.
 - (b) "The Purchase Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
 - (c) "The Goods" means all the items, which the Supplier is required to supply to the Purchaser under the Contract;
 - (d) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services training and other obligations of the Supplier covered under the Contract;
 - (e) "GCP" means the General Conditions of Purchase contained in this section.
 - (f) "The Purchaser" means the organization purchasing the Goods i.e **CENTRAL UNIVERSITY OF SOUTH BIHAR, GAYA.**
 - (g) "The Purchaser's country" is India.
 - (h) "The Supplier" means the individual or firm supplying the Goods and Services.
 - (i) "Day" means calendar day.

2. Application

- 2.1. These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the tender.

3. Standards

- 3.1. The Goods supplied under this Purchase shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned Institution.

4. Use of Purchase Documents and Information

- 4.1. The Supplier shall not, without the Purchaser's prior written consent, disclose the Purchase, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 4.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.
- 4.3. Any document, other than the Contract itself, shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

5. Patent Rights

- 5.1. The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

6. Submission of the bids

- 6.1. All bids completed in all respect must reach the purchaser within the last date and time of receipt

of bid. No extension shall be allowed for any reason what so ever. Late tenders/delayed bids and tenders received without earnest money etc. shall be rejected.

7. Inspections and Tests

- 7.1. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser.
- 7.2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.
- 7.3. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 7.4. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 7.5. Nothing in GCP Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.

8. Consequences of rejection

- 8.1. If in the event the stores are rejected by the purchaser at the destination and the supplier fails to make satisfactory supplies within the stipulated period of delivery, the purchaser will be at liberty to:
 - (a). Allow the supplier to resubmit the stores in replacement of those rejected, within a specified time without any extra cost to the purchaser or
 - (b). Reject the material, which shall be final and binding on the contractor.
 - (c). Procure the rejected materials of comparable quality from the open market/Govt. stores and the supplier shall be liable to pay the difference in price over get the amount adjusted from the outstanding bills of the supplier, if any or EMD.

9. Packing

- 9.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, in any subsequent instructions ordered by the Purchaser.

10. Delivery and Documents

- 10.1. The Supplier shall make delivery of the Goods within specified period from the placement of purchase order in pursuance of the notification of award. The purchase order would be placed after assessing the requirements on quarterly basis. However, the supplier shall also arrange to execute all orders on priority basis which would be placed to meet any emergent requirements
- 10.2. In case the purchaser decides to conclude parallel rate contracts, then the requirements would be split on different firms on equitable basis as per the discretion of the purchaser.
- 10.3. The delivery of Stores shall be affected at the premises of the University free of all delivery charges and within the stipulated time and as may be elucidated in the confirmed order, accompanied by a delivery challan. No extension of time for delivery of Stores shall normally be accorded.

Time and date of delivery – the essence of the contract: The time for and the date of delivery of the stores stipulated shall be deemed to be of the essence of the contract and delivery must be completed not later than the date(s) specified.

11. Insurance

- 11.1. The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be obtained by the suppliers in an amount equal to 110% of the value of the goods from “warehouse to warehouse” (final destinations) on “all risks” basis including war risk and strike.

12. Transportation

- 12.1. Where the Supplier is required under the Contract to transport the Goods within India defined as Project site, transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the contract Price.

13. Warranty

- 13.1. The Supplier warrants that the Goods supplied under this Contract are **new, unused**, of the **most recent** or **current models** and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in India.
- 13.2. This **warranty** shall remain valid for **minimum 03 (three) years or as per offered Warranty Card by the OEM (whichever is later)** after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, unless specified otherwise
- 13.3. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.
- 13.4. Upon receipt of such notice, the Supplier shall with all reasonable speed, repair or replace the defective Goods or parts thereof, without any extra cost to the Purchaser.
- 13.5. If the Supplier, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

14. Payment

- 14.1. The payment shall be made after inspection of the materials and satisfactory performance.
- 14.2. The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GCC Clause 10, and upon fulfilment of other obligations stipulated in the contract.

15. Prices

- 15.1. Prices charged by the Supplier for Goods delivered and Services performed under this Purchase shall not vary from the prices quoted by the Supplier in his bid.

16. Change Orders

- 16.1. The Purchaser may at any time, by written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:
- (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) The method of shipping or packing;
 - (c) The place of delivery; and/or

- (d) The services to be provided by the Supplier.
- 16.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

17. Contract Amendments

- 17.1. Subject to GCP Clause 16, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

18. Assignment

- 18.1. The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent

19. Subcontracts

- 19.1. The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.

20. Delays in the Supplier's Performance

- 20.1. Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser as per GCP clause 10.
- 20.2. If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract
- 20.3. Except as provided under GCP Clause 23, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to GCP Clause 21, unless an extension of time is agreed upon pursuant to GCC Clause 20.2 without the application of liquidated damages.

21. Penalty

- 21.1. Subject to GCP Clause 23, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, **as penalty, a sum equivalent to 1% per week** and the maximum deduction is **10% of the contract price** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 22.

22. Termination for Default

- 22.1. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part
- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser pursuant to GCP Clause 20; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

'For the purpose of this Clause:

"Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to

influence the action of a public official in the procurement process or in contract execution.

“Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”

22.2. In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 22.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

23. Force Majeure

23.1. Notwithstanding the provisions of GCP Clauses 20 & 21, the Supplier shall not be liable for imposition of liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

23.2. For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

23.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

24. Termination for Insolvency

24.1. The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

25. Termination for Convenience

25.1. The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

25.2. The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices.

26. Resolution of Disputes

26.1. The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

26.2. If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms as specified below. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

26.3. In case of Dispute or difference arising between the Purchaser and a supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996.

27. Governing Language

27.1. The contract shall be written in English language. Subject to GCC Clause 28, English language version of the Contract shall govern its interpretation. All correspondence and other documents

pertaining to the Contract which are exchanged by the parties shall be written in the same language.

28. Applicable Law

- 28.1. The contract shall be governed by the Law of Contract for the time being in force.
- 28.2. Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from which the acceptance of tender has been issued.
- 28.3. Jurisdiction of Courts: The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of this contract.
- 28.4. One month notice will be given by either party for termination of Contract during the tenure of Contract for breach of Clause or otherwise.

29. Taxes and Duties

- 29.1. Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 30. All legal disputes arising out of this contract /bid shall be subject to competent court and forum under judicature of Gaya only.
- 31. Submission of Performance Bank Guarantee as per GFR Rules 2017 (if applicable).



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

Annexure 'A'

List of Equipments

Sl. No.	Item description with specification (Attach separate sheet, if required)	Qty.	EMD Amount (INR)
1.	End Window Geiger Muller Detector Setup (Specification attached)	2	5200
2.	Multichannel analyzer-1 (Specification attached)	3	10200
3.	Gamma Ray Spectrometer System (Specification attached)	3	17400
4.	CsI Detector (Specification attached)	1	3600
5.	LaBr ₃ - Detector (Specification attached)	1	4000
6.	Plastic Scintillator Panel (Specification attached)	4	8000
7.	4 channel NIM High Voltage (Specification attached)	3	17400
8.	NIM 12 slot Crate (Specification attached)	3	22200
9.	Oscilloscope (Specification attached)	2	16000
10.	Multichannel analyzer-2 (Specification attached)	3	12000
11.	8 Channel Leading Edge Discriminator (Specification attached)	3	11400
12.	Triple 4-Fold Logic Unit (Specification attached)	2	6800
13.	Quad Scaler And Preset Counter (Specification attached)	2	7200
14.	NIM Dual Gate and Delay (Specification attached)	1	2800
15.	Spark counter Setup (Specification attached)	1	1100
16.	Rutherford experiment Setup (Specification attached)	1	6000
17.	BNC-BNC Cables-1 (Specification attached)	10	600
18.	BNC-BNC Cables-2 (Specification attached)	10	700
19.	BNC-BNC Cables-3 (Specification attached)	10	800
20.	LEMO-LEMO Cables-1 (Specification attached)	10	600
21.	LEMO-LEMO Cables-2 (Specification attached)	10	700
22.	LEMO-LEMO Cables-3 (Specification attached)	10	800
23.	SHV-SHV Cables-1 (Specification attached)	10	1600

24.	SHV-SHV Cables-2 (Specification attached)	10	1700
25.	SHV-SHV Cables-3 (Specification attached)	10	1800
26.	Goniometer (Specification attached)	2	160
27.	PXIe-Controller with Window 10-64 bit (Specification attached)	1	7400
28.	PXIe chassis (Specification attached)	1	9400
29.	PXIe FPGA (Specification attached)	2	19200
30.	Digitizer Adapter Module for FlexRIO (Specification attached)	2	24000
31.	PXI Digitizer -60MS/s (Specification attached)	2	23600
32.	PXI Digitizer -200MS/s (Specification attached)	1	17000
33.	Lead Flat Bricks (Specification attached)	100	6000
34.	Wax (Paraffin) Flat Bricks (Specification attached)	50	2000
35.	Liquid Nitrogen Dewar (Specification attached)	1	4400
36.	Neutron Detector (Specification attached)	1	4000
37.	Photomultipliers (Specification attached)	10	4000
38.	50 Ohm Terminator BNC (Specification attached)	10	400
39.	1 M Ohm Terminator BNC (Specification attached)	10	400
40.	50 Ohm Terminator LEMO (Specification attached)	10	400
41.	1 M Ohm Terminator LEMO (Specification attached)	10	400
42.	Radioactive Source (α, β, γ source)	10 (micro curie)	1000



Technical Specifications

1. Specification for End Window Geiger Muller Detector Setup

Geiger Muller Detector:

1. **Application:** Suitable for Gamma/Beta sample Counting.
2. **Operating Voltage:** Range: 450 - 750 V.
3. **Tube Dimensions:** Max. Overall length 1.93 inches.
4. **Gamma Sensitivity:** 50 cps / mR/hr with Co-60.
5. **Background with 40mm lead shielding:** < 20cpm.
6. **Efficiency at (1 cm):** (typical):
 - (a) For TI-204 ~ 5%.
 - (b) Sr-90 +Y90 ~ 15% (combined).
7. **Max. Diameter:** 1.13 inches.
8. **Gas filled:** Ne + Hal.
9. **End Window:** mica 2.0 mg/cm sq. density.

Geiger Counting system:

G.M. Input (From G.M.Counter):

(a) Polarity: Negative

(b) Amplitude: 250 mV (min)

Resolving Time: 6 micro sec (approx)

EHT Output: Variable EHT using ten turn pot up to a maximum of 1500 volts at 1mA. Line and load regulation better than 0.05%.

Ripple less than 10mV (rms).

Display: 20x2 LCD dot-matrix display has been provided to indicate data counts, Elapsed Time and EHT.

Modes of operation: Preset count & Preset time modes.

Counts Capacity: 999999 counts

Preset time: (0-9999) sec.

Data Storage: up to 1000 readings

DETECTOR ACCESSORIES

G.M. Detector sliding bench with detector holder & source holder for GM Detector, GM detector Stand,

Detector holder,

Absorber holder & lead block (For Back scattering of Beta particles experiment),

Radioactive Source Kit (Gamma Source Cs-137, Co-60 and Beta Source TI-204, Sr90),

Aluminum Absorber Set, Absorber/Scatterer Set (For Back Scattering of Beta Particles Experiment),

Absorber Set (For Production and Attenuation of Bremsstrahlung Experiment), Lead and Copper Absorber Set,

Data Communication software CD & USB cable (For downloading data into PC)

2. Specification for Multichannel analyzer-1

MCA resolution: 256, 512, 1K/8K.

Spectrum memory: 128K bytes single port SRAM.

Max counts / channel: 31 bit (2 Giga counts).

Pulse processing time: 7 μ s including ADC conversion time of 5 μ s.

Pile up rejection: Active high TTL input from spectroscopy amplifier.

DNL: + 1%

NL: + 0.05% F.S.

MCA Input: Single channel, 0 to +10 volts.

Data acquisition & processing software.

3. Specification for Gamma Ray Spectrometer System

Mini bin:

Accommodates SIX / EIGHT single bit modules or combination of multiple widths with Amphenol connectors. Bussed wiring provide to the power connectors to distribute +/- 12V and +/- 24V.

A control panel with ON/OFF switch, low voltage test sockets is provided on the right extreme side of the bin.

Minibin Dimensions: 34.4cm width X 22.1cm height X 27.4cm length.

HIGH VOLTAGE UNIT:

- Output voltage variable continuously from 0V to 2000 volts
- Output current (max) 1mA
- Load & Line regulations: Better than 0.05% of full scale
- Indefinite over load & short circuit protections and self-recovery
- Output ripple less than 10mV (rms).
- Dimensions: Two bit module

LINEAR AMPLIFIER:

- Input Polarity: Positive or Negative
- Total gain (Typical): 800 (approx)
- Output (Unipolar): 0 to 8V
- Max. Output (Unipolar): 12V
- Dimensions: Two bit module

SINGLE CHANNEL ANALYSER:

- Input: Unipolar or bipolar with a +ve leading edge 0 to 10V
 - Pulse Pair resolution (approx): 0.6 micro sec.
 - Output pulse polarity: +ve Pulse amplitude: +5V Pulse width: 0.5 micro sec
 - LLD output pulse amplitude: +5V Output pulse width: 0.5 micro sec
- Base line variable by: 10 turn helipot dial Base line variation: 0 to 10V by helical potentiometer
- Window width: Continuously variable by helical potentiometer (0 - 1) V in window mode (0 - 10) V in normal mode
 - Dimensions: Single bit module

COUNTER TIMER : COUNTER / RATEMETER:

- Input: 100mV to 10V, unipolar or positive bipolar Semi-Gaussian pulse
- Pulse width: 0.5 micro sec
- Polarity: Positive or Negative
- Input impedance: 1K (approx)
- Input Counts Capacity: 999999 counts
- Preset Time Range : 1 to 9999 Sec

Specification For NaI(Tl) Detectors

1. Crystal Type	Flat type NaI(Tl)
2. Crystal Sizes	2" x 2"
3. Photo multiplier	0.656" dia x 1.546" deep EMI 9857 or 9266 or its equivalent
4. Resolution (Better than)	8.5 %
5. Pre-amplifier	Built – in
6. Gain (Approx.)	> 20
7. Noise (RMS. referred to input)	Less than 50 μ V
8. Operating Voltage	700 to 900 V
9. Output	Positive Tail Pulse
10. Output impedance	90 Ohms
11. Power Requirement (Typical)	-12V @ 12 mA

Accessories: Sliding bench with source holder, Stand for scintillation detector, Scatter stand, Aluminum absorber set, Copper absorber set, Radioactive Source Kit (Gamma Source Cs-137, Co-60 and Beta Source TI-204, Sr90, Ba-133),

4. Specification For CsI(Tl) Detectors

1. Crystal Sizes	Flat type CsI(Tl)
2. Crystal Sizes	2" x 2"
3. Photo multiplier	0.656" dia x 1.546" deep
	EMI 9857 or 9266 or its equivalent
4. Resolution (Better than)	8.5 %
5. Pre-amplifier	Built – in
6. Noise (RMS. referred to input)	Less than 50 μ V
7. Operating Voltage	700 to 900 V
8. Output	Positive Tail Pulse
9. Power Requirement (Typical)	-12V @ 12 mA

5. Specification for LaBr₃ Detectors

1. Crystal Sizes	Flat type LaBr ₃
2. Crystal Sizes	2" x 2"
3. Photo multiplier	0.656" dia x 1.546" deep
	EMI 9857 or 9266 or its equivalent
4. Resolution (Better than)	8.5 %
5. Pre-amplifier	Built – in
6. Noise (RMS. referred to input)	Less than 50 μ V
7. Operating Voltage	700 to 900 V
8. Output	Positive Tail Pulse
9. Power Requirement (Typical)	-12V @ 12 mA

6. Specification for Plastic Scintillator Panel

Plastic Scintillation Detector:
 Length : 610 mm
 Width: 152 mm
 Thickness: 36 mm

Type EJ-200 wrapped in reflective material and light-tight vinyl coupled on 38 x 152 mm side to a 1.5 inch diameter PMT, provide with external Mu-metal shield. The PMT should be provided with a built-in voltage divider with SHV connector for HV and BNC connector for signal.

7. Specification for 4 channel NIM High Voltage

Packaging: Single width NIM unit
Output ranges: 8 kV / 300 μ A to 3 mA
Output channels: 4 channels, Common Floating Return, SHV connector Positive or Negative Polarity (requires internal setting)
Max. Ch. Output Power: less than 10 W
Vset / Vmon Resolution: less than 500 mV
Iset Resolution: less than 100 nA
Maximum Voltage: 0 ÷ 8100 V Absolute maximum HV level that the channel is allowed to reach, independently from the preset value Vset. Output voltage cannot exceed the preset value Vmax. The accuracy is 1 % \pm 5 V
Vmax resolution: less than \pm 2 V
Humidity range: 0 to 80%
Operating temperature: 0 to 45°C
Storage temperature: -10 to 70°C
Vout / Temperature coefficient: max. 50ppm / °C
Imon / Temperature coefficient: max 100ppm/C°; max 300ppm/C° with Imon X10 zoom
Long term stability Vout vs. Vset : less \pm 0.05% (after one week @ constant temperature)

8. Specification for NIM 12 slot Crate

Mechanics: 19" x 7U (5+2) bin, 12 slot,

Mains input: 230 VAC, 50-60 Hz.

Maximum Total Output Power: 300/600 W

Interface: RS 232, USB (2.0), CAN bus, Ethernet

Fuse: 4 A Class T @ 300W 220 Vac

8 A Class T @ 300W 115 Vac

6.3 A Class T @ 600W 220 Vac

15 A Class T @ 600W 115 Vac

Noise and ripple: < 3 mVpp @ ±6V, ±12 V, ±24 V (Typ.) < 5 mVpp @ ±6V, ±12 V, ±24 V (Max.)

Status control: Alarm signalled by FAIL LED, FAIL signal and buzzer Alarm reason displayed

Over Voltage Protection: Trip Off when the output voltage > 105% of nominal voltage

Under Voltage Protection: Trip Off when the output voltage < 95% of nominal voltage

Over Current Protection: Trip Off when the current > programmable Iset value

Over Temperature Protection: Trip Off when temperature of heat sink > 70° C or when transformer temperature > 110° C

Signaled:- temperature FAN Unit > 50°C- temperature Power Supply Control > 65° C

Operation: - 0 to 40°C without derating

Cooling: Airflow fan

9. Specification for Oscilloscope

Scope Channels	4 Channel
Bandwidth	200MHz to 500MHz
Sampling Rate	2GSPS to 5 GSPS
Display Memory Depth	2.5 kpts – 5 kpts
Scope Display Type	QVGA LCD Colour

10. Specification for Multichannel analyzer-2

ADC: **Sampling rate** 150 MS/s

Resolution: 14 bits

Operating Modes:

Pulse Height Analysis (PHA) 16k-channel pulse height histogram internally built up;

1k-2k-4k-8k-16k rebin options at software level

Oscilloscope mode for waveforms monitoring

Trigger Modes:

Internal trigger, External: channel is triggered by external trigger only (GP I/O 1 or GP I/O 2)

Software: Fully controlled by MC² Analyzer spectroscopy Software

for developers: general purpose C libraries with demo samples available

Power Requirements

Operating Supply Voltage

+5 VDC Absolute Max. Rating

+5.5 VDC

Consumptions (Typ. @ +5 VDC) 1.5 A

Communication interface:

Ethernet connection 10/100BT

USB 2.0 compliant or 3.0 compliant

Digital Signal Processing:

Manual and automated Pole-Zero cancellation; decay time up to 0.65 ms

Manual and automated trigger threshold adjustment

Digital decimation in programmable steps: 2-4-8

Digital fine gain

Pile-up rejection and Live Time correction

Baseline restorer with programmable averaging
Adjustable moving average low pass filter to reduce the high frequency noise

Analog Input:

BNC connector

Single ended, DC/AC coupled

Both continuous and pulsed reset preamplifiers

Impedance: 50 Ohm / 1 kOhm (sw selectable)

Positive and negative signals accepted

Programmable 4-step analog coarse gain corresponding to 1.25 Vpp, 2.5 Vpp, 5 Vpp, 10 Vpp ranges

Bandwidth: DC to 30 MHz

Programmable fine gain: 1. to 100

Programmable DC offset adjustment on the input in
the full scale range

11. Specification for 8 Channel Leading Edge Discriminator

Inputs Channels: 8 inputs, negative polarity, DC coupling, 50 Ohm impedance

Max Input voltage: -5 V

Threshold range: -1 mV to -255 mV (1 mV step)

Double Pulse Resolution: 7 ns (Updating mode); 12 ns (Non Updating mode)

Output Channels: 8x3 NIM (1 pair bridged + 1 complementary)

Output Rise/Fall Time : <3 ns

Output: NIM logic signal

Reflections: < 4% for input pulses of 2 ns rise time

12. Specification for Triple 4-Fold Logic Unit

Input: Std. NIM level, 50 Ohm impedance

Reflection coefficient: less than 6% for Std. NIM inputs of 2 ns risetime

Minimum pulse width: 3.5 ns (FWHM)

Output: Std. NIM level on 50 Ohm impedance

Width ranges: 6 ns to 100 ns or 20 ns to 800 ns selectable via internal jumpers

Rise/Falltime: 2 ns (10% to 90%)

Input/Output delay: 14 ns \pm 2 ns

AND/OR logic unit mode: Double pulse resolution (OR): 4.5 ns

Minimum coincidence overlap (AND): 3 ns

13. Specification for Quad Scaler And Preset Counter

Inputs: 1 NIM/TTL level input per section, 50 Ohm impedance; in. FWHM: 2 ns (sections 1 \div 4), 3 ns (section 5)

Gate: Section 1 and 3: 2 bridged high-impedance NIM/TTL inputs Section 2 and 4: 50 Ohm impedance NIM/TTL input

Carry: std. NIM level; two sections can be cascaded by feeding first CARRY into the input of the second section, thereby making a 16-digit counter

Load: 1 NIM/TTL input, loads counter with value set on thumb-wheel switches, min. FWHM: 3 ns

Comm. Reset: 1 NIM/TTL input, 50 Ohm impedance; clears sections from 1 to 4, min. FWHM: 3 ns

Output: 2 NIM outputs; are true as long as counter's value differs from zero

End marker: 1 NIM output; a pulse is generated when the counter reaches zero. Pulse width can be adjusted by turning the front panel trimmer (50 ns to 1 μ s)

Max. Frequency: Sections 1 to 4: 250 MHz (2 ns pulse FWHM)

Section 5: 80 MHz (3 ns pulse FWHM)

14. NIM Dual Gate and Delay Generator

INPUT

START Input: One; responds to both fast NIM-level and TTL-level inputs.

Fast NIM Input Requirements: Greater than -600 mV enables; minimum width 5 nsec; 50 ohm impedance for any input from +100 mV to -5.0 V.

TTL Input Requirements: Greater than +2.5 V enables; minimum width approximately 20 nsec; high impedance for any input from +400 mV to +6 V. (Requires +5 mA at +2.5 V.)

STOP Input: One; characteristics same as for "Start" input. Used when switch range is in Latch position. Can be used in Preset position but will cause a "delayed stop".

Blanking Input: One; requires fast NIM-level inputs (-600 mV) 50 ohm impedance; blanks all outputs which occur during its presence, including the delayed output*. Maximum blanking rate, 80 MHz.

"OR" Input: One; requires fast NIM-level inputs (-600 mV) 50 ohm impedance; extends preset gate duration by the portion of its input signal that occurs after the preset output time.

OUTPUT

Gate Outputs: One standard fast NIM-level output (quiescently 0 V; -750 mV during pulse) of approximately 2 nsec rise time; fall time slightly longer on wide widths. One complementary fast NIM-level output (quiescently -750 mV; 0 V into 50 ohm during pulse). One TTL-level output (quiescently 0 V; > +2.5 V into 50 ohm during pulse).

Delayed Output*: Delivers 10 nsec (FWHM) fast NIM-level signal into 50 W. Occurs approximately at the trailing edge of the preset or start-stop gate output (including any gate extension due to input "OR"); 2.5 nsec rise time.

Pre-settable Gate Durations: Continuous from < 100 nsec to > 11 sec plus latched position; full scale switch determines range. Screwdriver adjustment vernier permits fine adjustment from 10% to > 110% of full scale. Front-panel test point gives DC voltage related to gate width (in % of range switch setting). Conversion chart included with module. Output width jitter, approximately 0.05% of setting.

GENERAL

Recovery Time: None; unit may be retriggered immediately after gate output returns to its quiescent state.

Input-Output Delay: 14 nsec.

Manual: Front panel "Start" and "Stop" push-buttons permit manual operation when full scale switch set on "latch", and single-shot pre-settable operation when full scale switch is in any other position.

Bin Gate Driver: Each channel has one rear panel Lemo-type connector which switch selectively drives external bins in either normal or inverted direction. Logic 1: < 1 V at 200 mA; Logic 0: 0.5 V into high impedance (2 kohm).

Channel Select Switch: Rear panel 3-position switch (A/B/Off) determines which channel drives the bin in which the Model 222 is located.

Busy Indicator: Front panel LED remains on when gate output is present, even if extended by "OR" input.

Packaging: NIM-standard single width module; Lemo-type connectors.

Current Requirements: 95 mA at +12 V, 180 mA at -12 V, 45 mA at +24 V, 80 mA at -24 V, 235 mA at +6 V (drawn from +12 V if unavailable).

15. Specification for Spark counter Setup

Functions	EHT Output; Timing; Counting; Operator Interface; PC Interface
EHT Output	User settable from 100 Volts to 1000 Volts
Pre-sparking voltage setting mechanism	By digital potentiometer independent of Counting Sparking Voltage setting
Counting Voltage setting mechanism	By digital potentiometer independent of Pre-sparking voltage setting

Spark registration dead time	Less than 10 microseconds
Spark Counting Gate / Window time	User-settable from 1 to 10 Sec.
Spark Count Capacity	99999
Display	32 character backlit LCD Module
Parameters Displayed	Counts; EHT; Sample Number
Operating Keypad	Comprising 4 keys with tactile feedback
Display Resolution - Counts	1 count
Display Resolution - EHT	1 Volt
Data Storage Capacity	Up to 500 samples data
Parameter Stored for Each Sample	Pre-sparking Voltage and Counting Sparking Voltage, Gate Time Pre-sparking Counts, Sample Counts (4 Runs), Sample No.
Serial communication interface	RS 232 Serial port
Data retrieval software	Windows based application software
Operating Voltage	230 V AC \pm 20%, 50 Hz, Single Phase
Dimensions - Control Module	23 cm x 20 cm x 28 cm
Dimensions - Spark Head	8 cm dia. x 15 cm height

Accessories: Aluminized Mylar Film

16. Specification for Rutherford experiment Setup

Si surface-barrier detector attached Goniometer

Accessories: Pre-amplifier: High Voltage Module.

17. Specification for BNC-BNC Cables-1

Gender: (Male to Male)

Length: 1 Meter

Body Finish: Nickel

Body Material: Brass

Coaxial 50 Ohm (Solder)

18. Specification for BNC-BNC Cables-2

Gender: (Male to Male)

Length: 5 Meter

Body Finish: Nickel

Body Material: Brass

Coaxial 50 Ohm (Solder)

19. Specification for BNC-BNC Cables-3

Gender: (Male to Male)

Length: 10 Meter

Body Finish: Nickel

Body Material: Brass

Coaxial 50 Ohm (Solder)

20. Specification for LEMO-LEMO Cables-1

Type: FFA.00.250.CTAC31

Gender: (Male to Male)

Length: 0.5 Meter

Body Finish: Nickel

Body Material: Brass

Coaxial 50 Ohm (Solder)

21. Specification for LEMO-LEMO Cables-2

Type: FFA.00.250.CTAC31
Gender: (Male to Male)
Length: 1 Meter
Body Finish: Nickel
Body Material: Brass
Coaxial 50 Ohm (Solder)

22. Specification for LEMO-LEMO Cables-3

Type: FFA.00.250.CTAC31
Gender: (Male to Male)
Length: 5 Meter
Body Finish: Nickel
Body Material: Brass
Coaxial 50 Ohm (Solder)

23. Specification for SHV-SHV Cables-1

Type: RF/COAXIAL, SHV JACK, STR, 50 OHM, CL Connector Type: SHV Coaxial;
Connector Body Style: Straight Jack;
Coaxial Termination: Solder; Impedance: 50 ohm;
Coaxial Cable Types:-; Contact Material: Beryllium Copper;
Frequency Max: 2 GHz
Gender: (Female to Female)
Length: 2 Meter

24. Specification for SHV-SHV Cables-2

Type: RF/COAXIAL, SHV JACK, STR, 50 OHM, CL Connector Type: SHV Coaxial;
Connector Body Style: Straight Jack;
Coaxial Termination: Solder; Impedance: 50 ohm;
Coaxial Cable Types:-; Contact Material: Beryllium Copper;
Frequency Max: 2 GHz
Gender: (Female to Female)
Length: 7 Meter

25. Specification for SHV-SHV Cables-3

Type: RF/COAXIAL, SHV JACK, STR, 50 OHM, CL Connector Type: SHV Coaxial;
Connector Body Style: Straight Jack;
Coaxial Termination: Solder; Impedance: 50ohm;
Coaxial Cable Types:-; Contact Material: Beryllium Copper;
Frequency Max: 2GHz
Gender: (Female to Female)
Length: 10 Meter

26. Specification for Goniometer

Goniometer with detector holders.

27. Specification for PXIe-Controller

PXIe Quad-Core CPU Intel® Core™ i7 5700EQ (2.6 GHz quad-core processor)
On-die last level cache 6 MB
Single-Channel 1600 MHz DDR3L RAM, PC3 12800, 4 GB standard,
Hard Drive 320 GB Serial ATA, minimum
Ethernet Two 10/100/1000 Base T ports
PXI Express 4 Link Configuration x4, x4, x4, x4
PXI Express 2 Link Configuration x8, x8
GPIB (IEEE 488 Controller)
Serial Port (RS-232)
Parallel Port No Hi-Speed USB (2.0):4
SuperSpeed USB (3.0) Ports: 2
Express Card/34 Slot (available on the NI PXIe-8840 Quad-Core Express Card variant only)
Installed Operating System Windows 7 Professional

Board dimensions four-wide 3U PXI Express module
Slot requirements one system slot plus three control expansion slots

Compatibility Fully compatible with PXI Express Specification 1.0

28. Specification for PXIe chassis

Size 3U-sized; one system slot (with three system expansion slots) and 17 peripheral hybrid slots. Compliant with IEEE 1101.10 mechanical packaging. PXI Express Specification compliant. Accepts both PXI Express and CompactPCI (PICMG 2.0 R 3.0) 3U modules. Backplane bare-board material UL 94 V-0 Recognized Backplane connectors Conforms to IEC 917 and IEC 1076-4-101, UL 94 V-0 rated

Bandwidth: 4 GB/s

Onboard clock Type: VCXO

Classis Power Supply Type: AC

Input rating 100 to 240 VAC, 50/60 Hz, 10 to 5 A, 100 to 120 VAC, 400 Hz, 10 A

Slots: PXI Express System Controller Slot, Hybrid Peripheral Slot with PXI-5 Peripheral, Hybrid Peripheral Slot with PXI-1 Peripheral

29. Specification for PXIe FPGA

FPGA: Virtex-5 LX50

FPGA Slices: 7200

Block RAM: 1728 kBit

DSP Slices: 48

Dynamics RAM : 128 MB

PXI Backplane Link: PCI

30. Specification for Digitizer Adapter Module for FlexRIO

Number of Voltage Input channels: 32

Maximum Sample Rate: 50MS/s

Analog Input Resolution : 12 Bits

Analog Input Coupling: AC

Analog Input Bandwidth: 14 MHz

Analog Input Voltage Range: -1V to 1

Compatible FPGA: Kintex-7, Vertex-5

Accessories: SMB 16 Analog input (2 units) , SCH 68 -D4 2 meter (4 cables)
SMB digital I/O accessory.

31. Specification for PXI Digitizer -60MS/s

Bus Connector: PXI-Hybrid
Oscilloscope Bandwidth: 60 MHz
Sample Rate: 60 MS/s
Number of Voltage Input channels: 8
Analog Input Resolution : 12 Bits
Onboard Memory Size: 128 MB
Analog Input Impedance: 50 ohm , 1 MOhm
Analog Input Voltage Range: -15 V to 15

Accessories:

Number of Male BNC → Female SMB (1 meter) : 10 units
Number of Female BNC → Female SMB (1 meter) : 10 units

32. Specification for PXI Digitizer -200MS/s

Bus Connector: PXI-Hybrid
Oscilloscope Bandwidth: 150 MHz
Sample Rate: 150 MS/s
Number of Voltage Input channels: 2
Analog Input Resolution : 12 Bits
Onboard Memory Size: 8 MB/CH
Analog Input Impedance: 50 ohm , 1 MOhm
Analog Input Voltage Range: -10 V to 10

Accessories:

Number of Male BNC → Female SMB (1 meter): 5 units
Number of Female BNC → Female SMB (1 meter): 5 units

33. Specification for Lead Flat Bricks

Dimension: Length = 20 cm, Width = 10 cm, Height = 5 cm.

34. Specification for Wax (Paraffin) Flat Bricks

Dimension: Length = 60 cm, Width = 60 cm, Height = 5 cm.

35. Specification for Liquid Nitrogen Dewar

LN₂ capacity (liters) -30/50
Diameter - 43 cm (17 in.)
Height - 61.5/89.4 cm (24.2/35.2 in.)
Loss rate (liters per day) - 0.5/0.6

36. Specification for Neutron Detector

Wavelength of Maximum Emission, 425 nm
Decay Time, short component, 3.2 ns
Attached with photomultipliers and voltage dividers appropriate for PSD work

37. Specification for Photomultipliers

For scintillations counting,
50 mm to 127 mm Diameter,

Bialkali Photocathode, 10 Stage. Head-non type

Spectral response: 300 to 650 nm

Wavelength of Maximum response: 420.

Accessories: Compatible Socket.

Voltage supply: less than 2000 V

Signal Output: DC/Pulse

Leakage Current in Signal Max: 1×10^{-10} A.

38. Specification for 50 Ohm Terminator BNC

Gender: Male

Type: BNC

Body Finish: Nickel

Body Material: Brass

Termination: 50 Ohm

39. Specification for 1 MOhm Terminator BNC

Gender: Male

Type: BNC

Body Finish: Nickel

Body Material: Brass

Termination: 1 M Ohm

40. Specification for 50 Ohm Terminator LEMO

Gender: Male

Type: LEMO

Body Finish: Nickel

Body Material: Brass

Termination: 50 Ohm

41. Specification for 1 M Ohm Terminator LEMO

Gender: Male

Type: LEMO

Body Finish: Nickel

Body Material: Brass

Termination: 1 M Ohm

42. Radioactive Source

(α, β, γ source)

10 (micro curie)



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

CERTIFICATE

(to be provided on letter head of the firm)

I hereby certify that the above firm has not been ever blacklisted by any Central/State Government/Public Undertaking/Institute on any account.

I also certify that the above information is true and correct in all respect and in any case at a later date, if it is found that any details provided above are incorrect, then the contract given to the above firm may be summarily terminated and the firm may be blacklisted.

Date:

Place:

Authorized Signatory

Name:

Seal

Designation:

Contact No.:



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara,
Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

AFFIDAVIT

1. I/We the undersigned do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certifies that neither our firm M/s _____
_____ have abandoned any work/supply nor any contract awarded to us for such works/supplies have been rescinded, during last three years prior to the date of this bid.
3. The undersigned hereby authorize and request any bank, person, firm or Corporation to furnish pertinent information deemed necessary as requested by the Central University of South Bihar, to verify this statement or regarding my (our) competence and general reputation.
4. The undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Central University of South Bihar.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

Date:



CENTRAL UNIVERSITY OF SOUTH BIHAR

SH-7, Gaya- Panchanpur Road, Village- Karhara, Post- Fatehpur, P.S- Tekari, District- Gaya (Bihar) PIN- 824 236

Undertaking

Name of the work : _____

Tender No. : _____

We confirm that we have quoted the rates in the tender considering Inter-alia the

1. Tender Document(s) with all Annexures, Scope of Vendor
2. Additional Document(s), if any
3. BOQ Document (Price Bid Format)
4. Corrigendum, if any
5. Pre Bid Meeting Minutes, if any

We, _____ (Name of the Tenderer) hereby certify that we have fully read and thoroughly understood the tender requirements and accept all Terms and Conditions of the tender including all corrigendum/addendum issued, if any. Our offer is in confirmation to all the terms and conditions of the tender including all corrigendum/addendum, if any and minutes of the pre-bid meeting. In the event, our offer is found acceptable and contract is awarded to us, the complete tender document shall be considered for constitution of Contract Agreement.

Signed for and on behalf of Tenderer(s)

Name of Tenderer(s)

Date : __/__/____

Place :

Seal & Signature of Tenderer

Note :

This declaration should be signed by the Tenderer's authorized representative on COMPANY LETTERHEAD who is signing the Bid and to be submitted with tender.



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FINANCIAL BID PROFORMA

Tender Notice No.: CUSB/PSD/PHY/TENDER/26/2019-20, Dated: 30/01/2020

Subject: Supply & Installation of "Laboratory Equipments".

Name of the Bidder: _____

Sl. No.	Item description with specification (Attach separate sheet, if required)	Qty. (Nos.)	Warranty (in Years)	GST* @	Unit price (Rs.) Inclusive GST, delivery, installation & Other charges	Total price (Rs.) GST, delivery and installation
1.	End Window Geiger Muller Detector Setup	2				
2.	Multichannel analyzer-1	3				
3.	Gamma Ray Spectrometer System	3				
4.	CsI Detector	1				
5.	LaBr ₃ - Detector	1				
6.	Plastic Scintillator Panel	4				
7.	4 channel NIM High Voltage	3				
8.	NIM 12 slot Crate	3				
9.	Oscilloscope	2				
10.	Multichannel analyzer-2	3				
11.	8 Channel Leading Edge Discriminator	3				
12.	Triple 4-Fold Logic Unit	2				
13.	Quad Scaler And Preset Counter	2				
14.	NIM Dual Gate and Delay	1				
15.	Spark counter Setup	1				
16.	Rutherford experiment Setup	1				
17.	BNC-BNC Cables-1	10				
18.	BNC-BNC Cables-2	10				
19.	BNC-BNC Cables-3	10				
20.	LEMO-LEMO Cables-1	10				
21.	LEMO-LEMO Cables-2	10				
22.	LEMO-LEMO Cables-3	10				
23.	SHV-SHV Cables-1	10				
24.	SHV-SHV Cables-2	10				
25.	SHV-SHV Cables-3	10				
26.	Goniometer	2				
27.	PXIe-Controller with Window 10-64 bit	1				
28.	PXIe chassis	1				
29.	PXIe FPGA	2				
30.	Digitizer Adapter Module for FlexRIO	2				
31.	PXI Digitizer -60MS/s	2				
32.	PXI Digitizer -200MS/s	1				
33.	Lead Flat Bricks	100				
34.	Wax (Paraffin) Flat Bricks	50				
35.	Liquid Nitrogen Dewar	1				
36.	Neutron Detector	1				

37.	Photomultipliers	10				
38.	50 Ohm Terminator BNC	10				
39.	1 M Ohm Terminator BNC	10				
40.	50 Ohm Terminator LEMO	10				
41.	1 M Ohm Terminator LEMO	10				
42.	Radioactive Source (α, β, γ source)	10 (micro curie)				
Total Basic Amount (Rs.)						
Total Amount with GST (Rs.)						
Total Amount in words (Rs.)						

Note: No overwriting or use of whitener is permitted. If done then it will be summarily rejected.

***University provides DSIR Certificate for exemption of GST @ 5% .**

Date:

Signature

Name:

Designation & seal