



॥ सा विद्या या विमुक्तये ॥

भारतीय प्रौद्योगिकी संस्थान धारवाड
Indian Institute of Technology Dharwad

INDIAN INSTITUTE OF TECHNOLOGY DHARWAD

TENDER DOCUMENT

SUPPLY, INSTALLATION, COMMISSIONING, DEMONSTRATION and
TRAINING OF HIGH PERFORMANCE COMPUTING FACILITY

Tender No. IITDh/GA/CCDC&C/HPC/10/2018-19

Tender Notice for Supply, Installation, Commissioning, Demonstration and Training of High Performance Computing Facility

- | | | |
|---|--|---|
| 1 | Date of Tender Opening | : 03 rd October 2018 |
| 2 | Last Date for Submission of queries via email to pro@iitdh.ac.in | : 18 th September 2018 |
| 3 | Date of query rebuttal uploaded on the website | : 24 th September 2018 |
| 4 | Last Date and Time for Submission of Tender | : 03 rd October 2018 at 11:00 am |
| 5 | Opening of Technical Bid | : 03 rd October 2018 at 3:00 pm |
| 6 | Address for submission of bid documents | : The Officer on Special Duty (OSD) (Admin, Finance & Contracts) IIT Dharwad, Off Pune Bengaluru Highway Near High Court Dharwad, Karnataka – 580011, INDIA |
| 7 | Venue for opening of Technical Bid | : Same as above |
| 8 | Time of completion of Work | : 12 weeks from the date of issue of purchase order |
| 9 | EMD | : Rs. 5,00,000.00 (Rupees Five Lakhs Only) |

Detailed tender notice can be downloaded from the website of the Institute at: http://iitdh.ac.in/announcements_tenders.php

The right to suspend the tender process or part of the process, to accept or reject any or all the tenders at any stage of the process and/or to modify the process or any part thereof at any time without assigning any reason thereto vests with IIT Dharwad without any obligation or liability whatsoever.

Tender Notice for Supply, Installation, Commissioning, Demonstration and Training of High Performance Computing Facility

Indian Institute of Technology Dharwad invites sealed tenders (under two bid system) from Original Equipment Manufacturer (OEM) OR their authorized Dealers / System Integrators for the **Supply, Installation, Commissioning, Demonstration and Training of High Performance Computing Facility** as per the Technical Specification given in the schedule annexed to the tender.

The detailed specifications of the equipment are given in the Annexure-I and the same should be complied with. In case there is any deviation from the specifications, the bidder should clearly state the deviation(s) in the technical bid. Technical literature/leaflet showing the compliance of the specification may also be attached with the bid.

The bidder should note that the technical specifications mentioned in Annexure-I form the core of the product. **The offers must strictly be as per the specifications given in Annexure-I.** At the same time, it must be kept in mind that mere copying of our specifications in the quotation shall not make the technical bid eligible for consideration. A bid has to be supported with original catalogue (not of photo copy) of the quoted model duly signed by the principals and the same must be sent along with the technical bid. The quoted model should not become obsolete for a minimum period of 5 years (This is for the availability of spares). Therefore, the model quoted should invariably be highlighted in the leaflet/literature enclosed with the quotation. Non-compliance with above shall be treated as incomplete/ambiguous and the bid may be ignored without giving an opportunity to the bidder for further clarification/negotiation etc.

The technical bid shall be evaluated for acceptability by the technical committee and the committee may invite the bidders for discussion. If necessary, the committee may modify the technical specification to suit the requirement of IIT Dharwad. In such case the opportunity shall be given to all the participating bidders for submitting the revised bid as per modified specifications, if any.

Any item not specifically mentioned in the tender document but essential in the opinion of the bidder for successful implementation of HPC solution, should be brought to the notice of the IIT Dharwad well in advance. On clearance from our side, the same may be included in the quotation. However, the decision as to whether to consider such items or not rests with the Institute.

The bidder shall ensure that the bid submitted by him includes all equipment, hardware and software for full execution of contract. The bidder shall not charge extra for additional hardware and software items required to meet the operational requirement at the stage of installation and commissioning.

Quantity requirements of each item as per the specification enclosed at Annexure-1.

| SI No. | Particulars of the item(s) | Requirement |
|--------|---|--|
| 1 | Supply, Installation, Commissioning, Demonstration and Training of High Performance Computing Facility | Individual item requirements as per Annexure - I |

Time schedule for various bid related events:

| SI No. | Event | Time and Date |
|--|--|---|
| 1 | Last date of submission of tender | 03 rd October 2018 at 11:00 am |
| 2 | Opening of Technical Bid: | 03 rd October 2018 at 3:00 pm |
| 3 | Schedule for opening of Commercial Bid will be announced through notification link on http://iitdh.ac.in/announcements_tenders.php after evaluation of the Technical Bid and declaration of the list of bidders qualifying the Technical Bid. | |
| Presence of the bidder or his/her authorized representative at the time of opening of the Commercial bid is highly preferable. | | |

Only those bidders fulfilling the following eligibility criteria are expected to participate in the Tender

1. Bidder should be either an Original Equipment Manufacturer (OEM) or should be single Authorized System Integrator Partner/his Authorized Dealer having Direct Purchase and Support Agreement with the OEM. In case the bidder is Dealer, a valid LETTER OF AUTHORIZATION from the OEM should be produced along the bid. This excludes STORAGE SOLUTION and SMART-RACK SOLUTION but MAF must be submitted.
2. In case the bidder is a System Integration Partner of the OEM, a certificate from the OEM clearly stating the relationship and level of partnership with the Partner and authorization to the Partner to quote for this specific tender enquiry is to be furnished. **One OEM can authorize one partner only and one partner can represent only one OEM.**
3. OEM/Bidder should be registered under the Companies Act, 1956 or a registered firm of India. A copy of Registration certificate indicating above should be submitted. Bidder (and/or OEM) must have a well established service center in India. A certificate regarding this must be provided.
4. OEM/bidder should have documentary evidence of having supplied, installed and integrated at least **one** Infiniband OR OPA based HPC cluster of 50 TF or higher (in a single order) in an Indian, Centrally/State funded institutions (like IITs, IISc, IISERs, TIFRs, NITs) or in Central Government organizations or PSUs or Universities. **OEM/bidder must provide proof of supply and a certificate of satisfactory performance of the installed cluster.** This must be produced along with the bid document.
5. OEM/bidder must be in existence in the HPC business for at least last 5 years. Documentary proof should be supplied.
6. OEM/bidder should have average annual sales turnover of Rs. 10 Crores or more during the last three financial years ending 31st March 2018 in India. Attach firm's last 3 years audited profit and loss Account balance sheet duly audited by C.A.
7. OEM/bidder should be registered with the concerned statutory authorities for GST, Income tax etc. Bidder should furnish along with the bid document, the relevant GST Registration Document and PAN/TAN copies.
8. A Certificate/Undertaking on the letter head of the Company to the effect that the OEM/bidder had not been blacklisted anywhere in India by any organization.
9. OEM has to feature in the top 500 supercomputer sites (available at www.top500.org) consistently over the past 3 years with at least 5 installations globally and mentioned in the list over the past 3 years.
10. OEM/Bidder should provide **List of Present Clientele** to whom identical or similar equipment supplied in the preceding 3 years with contact addresses and telephone numbers.

Additional Clauses for Successful bidding/participation

1. An undertaking from the OEM/Bidder for points mentioned below should be enclosed with the technical bid, wherever applicable:
 - a. All hardware components offered in the Bill of Material should be covered under OEM support program so as to get back-end support/benefits from Principals/OEM in terms of software update/maintenance releases.
 - b. Access to 24 x 7 online support for 5 years from Technical Assistance Center of OEM/bidder for satisfactory resolution of problems with the help of online tools and technical assistance.
 - c. The defective part(s) must be replaced within a period of two working days during warranty period (3 years). If it is impossible to find replacement in two days, the matter should be discussed with appropriate authority at IIT Dharwad. The OEM/bidder must provide three years comprehensive on-site warranty for the supplied hardware & software. **Comprehensive AMC for 2 additional years (4th and 5th year) should be quoted separately for each year.**
 - d. Onsite spares for mother boards, hard-disk, power supply for compute nodes, and memory amounting to at least 2% of installed capacity need to be provided.
 - e. OEM/bidder must have an India based support infrastructure by maintaining a local spares depot in the country. This is to ensure immediate delivery of spare parts from OEM to its channel partner/system integrator.
 - f. One site/visit engineer has to be deployed for a site-visit of 1 full working day (9.30am to 5.00pm) per week for a period of 12 months after the initial training on "how to manage the HPC facility" to the authority at IIT Dharwad. The site/visit engineer should be appointed from the date of acceptance and installation of HPC at IIT Dharwad, Walmi campus. Engineer should have experience of HPC environment and should be able to solve first level of all types of call/queries related to HPC. Further, during off-campus days, the Engineer should be able to support over telephone. A detailed resume of the Engineer to be provided along with Technical Bid.
 - g. One free of charge re-location and re-commissioning of the HPC facility from the present Walmi campus of IIT Dharwad to the permanent campus of IIT Dharwad should be provided.
 - h. OEM/bidder should be in a position to provide case logging procedure for both hardware and software failure.
 - i. OEM/bidder should specify the theoretical peak computing power in TFLOP for the proposed solution. OEM/bidder should also specify the expected sustained TFLOP (HPL Benchmark) based on previous experience with similar sized clusters.
 - j. OEM/bidder should give a Benchmark Report and Performance Demonstration for the HPC solution.
2. The supplier should quote for commercially proven model of equipment or control system. Prototypes are not acceptable.

The above mentioned basic eligibility conditions and additional clauses are broad guidelines for pre-qualification and the Director, IIT Dharwad hereby reserves the right to relax/alter/modify/add any or all the conditions.

Procedure for Bid submission

Following are the procedure for submission of Bid, and other important conditions to be fulfilled by the bidder. Every page, containing the said procedure for submission of bid and other important conditions, are to be **signed** by the bidder and to be submitted along with their Technical bids towards their acknowledgement that they have gone through all the contents in these pages and in the Annexure as well and they are agreeing to comply to all of the conditions mentioned there. **NON ADHERENCE TO THIS MAY LEAD TO THE DISQUALIFICATION OF THE BID WITHOUT FURTHER NOTICE.**

TWO BID SYSTEM:

The offers/bids are to be submitted under a two bid system, namely **(i) Technical Bid** and **(ii) Commercial Bid**. The Technical Bid must contain all the details as specified in the Annexure along with the terms and conditions whereas Commercial Bid must indicate the quantity & rate only. **THERE MUST NOT BE ANY PRICE ELEMENT IN THE TECHNICAL BID.**

SEALING & MARKING OF BID:

The tender should be submitted in a proper manner with index for easy identification i.e.:

| Envelope Number | To be Super scribed as |
|-----------------|------------------------|
| A | EMD for Tender |
| B | Technical Bid |
| C | Commercial Bid |

Envelope – A (duly sealed): should contain the Demand Draft towards **Earnest Money Deposit.**

Envelope – B (duly sealed): should contain the documents as listed under **Technical Bid** below.

Envelope – C (duly sealed): should contain the document as listed under **Commercial Bid** below.

All the above three envelopes should clearly be marked on top of envelopes about the type of envelopes (i.e., A, B, & C), details of contents in envelopes, name of agency submitting the bid.

The envelopes (A, B & C) including the bigger envelopes shall be addressed to:

The Officer on Special Duty (Admin, Finance & Contracts)
IIT Dharwad, Off Pune Bengaluru Highway,
Near High Court, Dharwad - 580011, Karnataka, KA, INDIA

The bigger envelopes must be sealed and must bear the following identification on top:

- Tender for '**Supply & Installation of High Performance Computing Facility**'
- Tender Number: _____ Date: _____, and
- Name and Address of the Bidder. (on bottom left of the envelopes)

If the outer envelope is not sealed and not marked as above, the Institute will assume no responsibility for the misplacement or premature opening of Bid.

SUBMISSION OF TENDER:

The tender can be personally dropped in the box to be kept in on all working days (except Saturday, Sunday & Holidays) between 10.00am and 1.00pm in the forenoon and 3.00pm and 5.00pm in the afternoon session before the date and time as specified in the Tender Notice and up to **11.00am** on the last date of submission of tender. The tender can also be sent by registered post to **The Officer on Special Duty, Admin, Fin & Contracts, Indian Institute of Technology Dharwad, Off Pune Bengaluru Highway, Near High Court, Dharwad - 580011, Karnataka, INDIA.** Tender shall not be received after expiry of the time as specified on the 1st page of the tender notice.

EARNEST MONEY DEPOSIT (EMD):

Rs. 5,00,000/- (Rupees Five Lakhs only) in the form of a Demand Draft drawn in favour of "Dean, IIT Dharwad" and payable at any nationalized bank at Dharwad. Photocopy/Fax copy of the demand draft will not be accepted.

Any tender without original EMD would be considered as **"DISQUALIFIED"** and hence would be **REJECTED.**

RETURN OF EMD:

- The EMD of the unsuccessful bidders will be returned to them without any interest on receipt of written request from them within thirty days after awarding the contract to the successful bidders.
- The EMD of the successful Bidder will be returned after receiving Performance Bank Guarantee covering the contract & the warranty period.

FORFEITURE OF EMD:

After receiving the Purchase Order, if the OEM/Bidder is unable to execute the order satisfactorily, the Earnest Money Deposit will be forfeited and the Institute will be constrained to take necessary action against the OEM/Bidder.

REJECTION OF TENDER:

In the event of the following, the Technical Bid of a bidder will not be considered at all and will in fact be summarily rejected and all the documents will be returned on a subsequent date as would be found suitable by the Committee –

- a. If the Demand Draft towards payment of EMD is not put separately in the bigger envelopes as instructed; and/or
- b. If it is to be presumed that the Demand Draft towards EMD is kept inside the sealed envelopes containing Technical Bid/Commercial Bid; and/or
- c. If the Demand Draft towards EMD is not valid and acceptable; and/or
- d. If without breaking seal of the other envelopes it cannot be detected which envelopes contains Technical Bid; and/or
- e. If any price element is found understandable in any way from any paper other than Commercial Bid.

On verifying each and every point as mentioned above, the Technical bid will be opened to examine all the documents and to decide on all related aspects as per Institutes specification and requirements.

PERFORMANCE BANK GUARANTEE (PBG) FOR SUCCESSFUL BIDDER

The successful bidder(s) should provide a performance bank guarantee amounting 10% of the order value in the format provided by IIT Dharwad within 15 days of receiving the order. The PBG should be valid for the period of contract covering the entire warranty period of five years (3 years OEM comprehensive warranty + 2 years committed AMC) plus two months.

If the successful bidder(s) is/are unable to provide PBG within the stipulated period, his/their EMD will be forfeited by IIT Dharwad with or without consulting.

ADDITIONAL CRITERIA FOR QUALIFICATION IN THE TECHNICAL BID

- The bidder must submit above documents including NIL report, if any, duly attested by them with signature and seal of the firm on each page of every document. In the event of non-receipt of any of the above documents with the Technical Bid, bidder will be disqualified from the process. Any paper relating to the above documents will not be received during the Technical Bid meeting. Further, any separate correspondence in the matter shall also not be entertained.
- During evaluation of the Technical Bid, the Committee as would be constituted for the purpose and will scrutinize the documents mentioned above and may forward any or all the documents to the concerned authorities for verification and authentication. In case of any document(s) as submitted by the bidder found/reported to be fake, the bidder will be out of the tendering process besides any legal action that may be initiated against the bidder, as per rules. Further, the Committee may visit the factory site of the Manufacturer to inspect and assess the capability etc.
- Besides, scrutinizing the documents submitted with the Technical Bid, the bidder may be interviewed and/or asked to make a technical presentation by the Committee to assess the eligibility, capability, and suitability of the solution proposed by the bidder. As such, the presence of the bidder or any authorized representative of the bidder in the Technical Bid meeting is preferable.

OPENING OF COMMERCIAL BID:

The offer/bid will be opened by a Committee, as would be constituted by the competent authority, at a pre-defined place, time and date in the presence of all such bidders and/or their authorized

representatives. The Commercial Bid of the technically qualified bidder(s) will ONLY be opened. The Commercial Bid should be submitted as per the format enclosed with the tender document on the letter Head of the Firm/Agency. The rate should be clearly submitted with breakup of Basic Price, GST, etc. Commercial Bid in any other form will not be accepted and be SUMMARILY REJECTED.

BID VALIDITY:

- The Bid shall remain valid for the period not less than six (6) months after the last date set for bid submission.
- A bid submitted for a bid validity of shorter period may be rejected as non-responsive.

LATE BID:

Any bid received after the dead line as prescribed in the tender notice will be treated as a late bid and will not be considered.

ACCEPTANCE AND REJECTION:

The right to shortlist/reject any or all the tenders and/or to accept the whole or any part of the tenders without assigning any reason whatsoever would vest with the management of IIT Dharwad.

DELIVERY PERIOD:

12 Weeks from the date of placement of Purchase Order. On completion of the manufacturing of the item ordered for, the OEM/Bidders will have to inform the same to the Dean (R&D), IIT Dharwad, Off Pune Bengaluru Highway, Near High Court, Dharwad – 580011, Karnataka, India in writing, who will instruct the OEM/Bidder about the location for delivery of the materials and date of delivery.

FREIGHT & INSURANCE:

No freight and insurance charges will be provided and the materials are to be delivered at IIT Dharwad Walmi Campus, as may be desired by the IIT Dharwad at the cost and risk of the OEM/Bidder.

WARRANTY DECLARATION:

- The Bidder/OEM must give a comprehensive on-site THREE YEAR WARRANTY of the items from the date of delivery/installation and acceptance of the item against any manufacturing defect and also give the warranty that everything to be supplied by them shall be free from any defects and fault in materials, workmanship and shall be of the highest quality and materials of the type ordered shall be in full conformity with the specifications. A Bond is to be signed /executed by the supplier to this effect.
- Any deviation in the equipment, and the specification from the accepted terms and conditions may be liable to be rejected and the bidder/manufacturer need to supply all the items in the specified form to the satisfaction/specifications specified in the order and demonstrate at their own cost. The payments shall be made only after receiving the materials as per required specification and quality to the satisfaction of the competent authority of IIT Dharwad.

FAILURE OF ORDER EXECUTION:

If a successful bidder after receiving the order fails to execute the order within the stipulated period or does not fulfill any of the terms and conditions in any respect, IIT Dharwad reserves the right to cancel the order unilaterally and forfeit the EMD amount.

INSTALLATION, TRAINING & DEMONSTRATION:

Bidders, at their cost, need to provide adequate training to the nominated persons of IIT Dharwad. IIT Dharwad will not bear any training expenditure. The supplier is required to carry out the installation and demonstration of the equipment within **one month** of arrival of materials at the IIT Dharwad installation site; otherwise the penalty clause will be the same as per the supply of material (refer to the liquidated damages below).

In case of any mishandling/damage to equipment and supplies during carriage from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk of cost. Supplier will settle his claim with the insurance company as per his convenience. IIT Dharwad will not be liable for any type of losses in any form.

PAYMENT TERM:

Payment shall be made after the successful delivery, installation, commissioning, demonstration and acceptance of the equipment at IIT Dharwad. However, PBG should cover the entire warranty period plus two months.

LIQUIDATED DAMAGES:

The equipment should be delivered/dispatched to destination and ready for use not later than the delivery period specified. If the OEM/Bidder fails to deliver any or all the stores or perform the service by the specified date, liquidated damages @2% per month or part thereof in respect of the value of the delayed stores will be deducted from the bill subject to a maximum of 10%. Same terms are applicable for installation, training and demonstration clause mentioned above.

FINAL SELECTION AND AWARD CRITERIA: L-1 CRITERIA.

The total cost including the AMC cost for 4th and 5th year will be considered for declaring L1. However, the decision of the Competent authority will be final and binding in awarding the order.

DISPUTE AND JURISDICTION:

Any legal disputes arising out of any breach of contract pertaining to the whole process of this tender shall be settled in the court of competent jurisdiction in the district of Dharwad, Karnataka.

ACKNOWLEDGEMENT BY THE BIDDER:

It is hereby acknowledged that we have gone through all the schedules as well as the conditions mentioned above and we agree to abide by these.

Date:

Signature of the Bidder along with official seal.

Place:

| |
|---|
| CANVASSING OR OFFER OF AN ADVANTAGE OR ANY OTHER INDUCEMENT BY ANY PERSON WITH A VIEW TO INFLUENCING ACCEPTANCE OF A BID WILL BE AN OFFENSE UNDER LAWS OF INDIA. SUCH ACTION WILL RESULT IN THE REJECTION OF BID, IN ADDITION TO OTHER PUNITIVE MEASURES. |
|---|

Encl: Specifications at Annexure-1
OSD (AFC) IIT Dharwad
For and on behalf of Director, IIT Dharwad

| No. | Description | Information | | |
|-----|--|------------------------------------|-----------|----------|
| 1 | Name | | | |
| 2 | Address (with Contact number and mail ID) | | | |
| 3 | Address of the Factory site (with contact number) | | | |
| 4 | Name of the Proprietor with Mobile Number | | | |
| 5 | Name of the authorized Representative with designation and Mobile Number | | | |
| 6 | Trade license Number (copy to be enclosed) | | | |
| 7 | Permanent Account Number (copy to be enclosed) | | | |
| 8 | GST Registration Number (copy to be enclosed) | | | |
| 9 | Up to date VAT & GST (copies to be enclosed) | | | |
| 10 | Audited Statement of Accounts submitted for last three years (copies to be enclosed) | | | |
| 11 | Proof of bulk supply of similar stores in the last three years enclosed? | | | |
| 12 | Average annual turn-over during last three years (Rupees to be shown in crores) | 2015 – 16 | 2016 – 17 | 2017– 18 |
| | | | | |
| 14 | Details of EMD | Rs. Bank : DDNo. : Date : | | |
| 15 | Any other information | | | |

Acknowledgement: It is hereby acknowledged that I/We have gone through all the schedules as well as the terms and conditions laid down in the tender notice for procurement of the items for IIT Dharwad.

Declaration: I/We do hereby declare that the above information submitted by me/us are true to the best of my/our knowledge and I/We have submitted the documents in support of all the information asked for. I/We also agree to the condition that the right to suspend the tender process or part of the process, to accept or reject any or all the tenders at any stage of the process and/or to modify the process or any part thereof at any time without assigning any reasons thereto is reserved by the Competent authority of the Institute without any obligation or liability whatsoever.

Date:

Place:

Signature of the Bidder along with official seal.

**INDIAN INSTITUTE OF TECHNOLOGY DHARWAD
KARNATAKA - 580011**

COMPLIANCE STATEMENT

Ref: Tender Notice No. _____, Date _____.

Instructions:

1. You have to fill in all the columns and ensure that you furnish all the required information accurately and unambiguously.
2. If our specification contains any values, you have to provide your values against the column in the same unit as specified.
3. Deviation in values, materials etc. from our specification may be explained in the remarks column.

| Sr. No. | Check list of documents/ Undertakings ? | YES/NO | Remarks (Give explanation if answer is No) |
|---------|--|--------|---|
| 1 | Is Tender fees (EMD) attached? | | |
| 2 | Is the bidder original equipment manufacturer (OEM)/authorised dealer? | | |
| 3 | If authorised dealer, a recent dated certificate to this effect from OEM, attached or not? | | |
| 4 | Undertaking from OEM regarding technical support & extended warranty period | | |
| 6 | Validity of 180 days or not? | | |
| 7 | Undertaking from bidder regarding acceptance of tender terms & conditions | | |
| 8 | Whether list of reputed users (along with telephone numbers of contact persons) for the past three years specific to the HPC installation is attached. | | |
| 9 | Whether special educational discount for Indian Institute of Technology Dharwad, Karnataka given. | | |
| 10 | Whether two weeks of training of the nominated persons without any charges offered. | | |
| 11 | Does the instrument Complies with all the required specifications as per Annexure I. Attach a separate sheet showing compliance with the specifications and explanations thereto if the equipment's varies from the requested specifications? | | |
| 12 | Whether free Installation, Commissioning and Application Training offered. | | |
| 13 | Whether three years comprehensive onsite warranty offered. | | |
| 14 | Whether Comprehensive Annual maintenance cost (4th and 5th year), after expiry of three year comprehensive onsite warranty, quoted separately. | | |

TO BE TYPED ON THE LETTER HEAD OF THE BIDDER/OE MANUFACTURER

Commercial BID

To
The Officer on Special Duty
Admin Fin & Contracts
IIT Dharwad

Subject: Supply, Installation, Commissioning, Demonstration and Training of High Performance Computing Facility

Ref.: Tender Notice No. _____, Date _____.

Sir,

I/We do hereby submit our Commercial Bid for each of the items (i.e. item 1 to 7 for High Performance Computing facility) mentioned in the tender notice under reference.

[Mention all figures in Indian Rupees, Include all charges]

| Sl No. | Description of item (1 to 8) (as per tender technical specifications) | No. of Units | Basic Rate per Unit | GST | Other Charges, if any | Total Price per unit |
|-----------------------|---|----------------------------------|---------------------|-----|-----------------------|----------------------|
| 1 | Supply & Installation of High Performance Computing Facility Mentioned ITEMS 1 to 8 as per Annexure - I separately, include the AMC cost for 4th and 5th | Quantity as specified in Annex-I | | | | |
| Validity of Offer: | | | | | | |
| Any other conditions: | | | | | | |

Declaration: I/We do hereby accept all the terms and conditions laid down in the tender notice for the above said supply. I/We also agree to the condition that the right to suspend the tender process or part of the process, to accept or reject any or all the tenders at any stage of the process and/or to modify the process or any part thereof at any time without assigning any reasons thereto is reserved by the Competent authority of the Institute without any obligation or liability whatsoever.

Date:

Signature of the Bidder along with official seal.

Place:

Technical Specifications for CPU multicores based HPC facility**1. Master/Login Node****(Quantity : 1)**

| | |
|------------------|---|
| Processor | Two physical processors with x86_64 architecture, each having 12-cores or higher, running @ 2.0GHz or higher base frequency. Must be capable of supporting memory running at 2666 MHz, base performance per physical processor should be 1.5 TF or higher |
| Memory | 384GB (12 x 32 GB) DDR4-2666 MHz, ECC, populated in balanced performance with all channels populated and should have 12 free DIMM slots for future expansion |
| Disks | 2 x 4 TB, 7200RPM SATA HDDs, Raid 0,1 supported |
| Graphics Support | Server based graphics controller on board |
| Interconnect | 1 x 100Gbps (or higher) low-latency interconnect (Mellanox EDR InfiniBand or Intel® Omni-Path) connected to PCIe 3.0 x16 |
| Management | Dedicated management port with KVM over LAN support enabled |
| Expansion | 4 PCIe 3.0 slots, with atleast 2 nos of PCIe 3.0 x16 slots |
| Ports | 2 USB, 1 VGA ports |
| Form Factor | SMART Rack-mountable with rail-kit, 1U form factor |
| Power Supply | hot-pluggable and N+N redundant 80PLUS Platinum or better |
| Warranty | 3 years OEM comprehensive warranty, committed AMC for 4th and 5th year |

2. Compute Node(s)**(Quantity : 30)**

| | |
|------------------|---|
| Processor | Two physical processors with x86_64 architecture, each having 12-cores or higher, running @ 2.0GHz or higher base frequency. Must be capable of supporting memory running at 2666 MHz, base performance per physical processor should be 1.5 TF or higher |
| Memory | 192GB (12 x 16 GB) DDR4-2666 MHz, ECC, populated in balanced performance with all channels populated and should have 12 free DIMM slots for future expansion |
| Disks (Optional) | Diskless nodes, if bidder provides one disk per node, then include 1 x 240 GB Enterprise Grade SATA SSD |
| Interconnect | 1 x 100Gbps (or higher) low-latency interconnect (Mellanox EDR InfiniBand or Intel® Omni-Path) connected to PCIe 3.0 x16 |
| Management | Dedicated management port with KVM over LAN support enabled |
| Expansion | at least 1 no of free PCIe 3.0 x16 expansion slot |
| Ports | 2 USB, 1 VGA ports |
| Form Factor | SMART Rack-mountable with rail-kit, 1U Form Factor |
| Power Supply | hot-pluggable and N+N redundant 80PLUS Platinum or better |
| Warranty | 3 years OEM comprehensive warranty, committed AMC for 4th and 5th year |

3. 100Gbps, Non-blocking, Switching Fabric**(Quantity : 1)**

Mellanox EDR InfiniBand

OR Intel® Omni-Path

The InfiniBand/OPA interconnect with a minimum of 36 ports, EDR/OPA along with required cables, with rack-mounting kit.

Warranty: 3 years OEM comprehensive warranty, committed AMC for 4th and 5th year

4. 48-port, Layer-2 managed, Gigabit Ethernet Switch**(Quantity : 1)**

with rack-mounting kit for HPC communication along with the required cables.

Warranty: 3 years OEM comprehensive warranty, committed AMC for 4th and 5th year

5. Storage: Parallel File System**(Quantity : 1)**

- Lustre based Parallel File System (PFS) of minimum 100 TB usable capacity in hardware RAID 6 (8+2) or equivalent layout with a minimum of 2 GB/s demonstrable write performance on IOR and two global hot spare disks.

- Expandable to 200 TB usable capacity.
- The IOR benchmark should be run from the compute nodes and using 1 MB block size and the output file size used for IOR should be double than the I/O server memory and storage cache. IOR performance should be demonstrated on-site as part of the acceptance test.
- The I/O servers required for demonstrating the IOR performance should be part of the storage solution and the hardware and software on the I/O nodes should be configured appropriately to meet the performance.
- Components used for building the storage solution such as I/O nodes, controllers, etc. should rack mountable and mounted in a rack.
- The I/O nodes, if not embedded into the storage box, should run any popular version of LINUX.
- The storage solution should not have any single point of failure including the I/O servers, controllers, storage array, power supply, etc.
- Individual Hard Disk Drives used for the building the storage solution should be of at least 4 TB or higher capacity SATA/NL-SAS disks at 7200 RPM or higher.
- All components like cables, connectors, etc. for integration of the storage solution should be included in the quotation.
- Management Interface
 - Browser based management GUI.
 - Should have management tool to monitor status and health of the storage system, like Performance, throughput, Network Connection, controller health.
- Warranty: 3 years OEM comprehensive warranty, committed AMC for 4th and 5th year

6. Software:

- Cluster Manager: Open Source
- Job Scheduler : Open Source (preferably with GUI based job monitoring & management)
- OS : Open Source, Cent OS 7.x
- Compilers and Libraries: OpenMPI, MVAPICH, Intel MPI, Blas 1,2,3, LAPACK
 - Intel Parallel Studio-Cluster Academic version 2 seats floating with 3 years support

7. Smart-Rack and Power-Back-Up Solution:

- A Smart-Rack and Power-Back-Up solution (two-rack solution) should be a complete DC infrastructure (inbuilt Rack based cooling), offering smoke detection system with indicators, rodent control system, fire suppression system with necessary piping & detection sensors, alarm for any malfunctioning, toughened glass front panel all integrated together inside a rack. All monitored data and alarms to be sent via network for remote monitoring
- Possibility of enhancement of DC infrastructure as computing requirement increases in future
- N+N redundancy for power and cooling
- N+N built in redundancy based precision cooling unit (only inside rack), with in-built humidifier and dehumidifier to take care of minimum 20 kW operating power load at any time (24 x 7 operation)
- 42U, sturdy frame, corrosion resistance front glazed door and body of the rack
- Warranty for cooling solution: **3 year onsite** comprehensive support, committed AMC for 4th and 5th year
- 30 kVA, true online, 3 phase UPS with full (N+N) redundancy and 20 minutes of Run-Time (power backup) on each UPS under full load. UPS units to be external to the smart rack with independent battery banks, industry grade battery bank (dry and maintenance free), Sealed Maintenance Free (SMF)
- SNMP control, high power factor (0.9 or more), high efficiency (0.92 or more), sine wave output
- Only from reputed OEMs (APC, Delta, Vertiv, EATON, Socomec) with ISO certifications. CE compliant.
- Seamless integration of UPS and Smart Rack Solution to be done by the bidder.

8. Rack mount LCD monitor (foldable, at least 17") with KVM switch, keyboard and mouse.

The rates quoted by the supplier should, in addition to the cost of the items, include charges towards installation, relocation, spares, consumables, transportation, insurance, freight, loading, unloading, services of site engineer, taxes and duties etc. covering the free warranty period of three years and the extended comprehensive annual maintenance contract of additional two years (4th and 5th years).