

**COST OF TENDER Rs.500/-ONLY**

**TENDER NO: IIITDMJ/P&S/2016-17/HPC/02**

**Dated 05/06/2017**

**TENDER DOCUMENT**  
**FOR**  
**HIGH PERFORMANCE COMPUTER**

**PDPM**

**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,  
DESIGN & MANUFACTURING, JABALPUR  
Dumna Airport Road Jabalpur - 482005**

*Handwritten signatures in blue ink.*

## INVITATION FOR TENDER

### **Sub: Notice inviting tender for supply, installation and commissioning of High Performance Computer**

Registrar, PDPM-Indian Institute of Information Technology, Design and Manufacturing, Jabalpur invites tenders from Original Manufacturers or experienced HPC suppliers for supply, installation & commissioning of following item.

**High Performance Computer - as per the Annexure-1**

Interested bidders can send their sealed tenders for supply, installation and commissioning of HPC. The specifications are given at Annexure- I. The General terms and conditions for bidders are given in Annexure-II.

<b>Tender Reference No.</b>	<b>Enquiry No. IIITDMJ/P&amp;S/2016-17/ HPC/02</b>
<b>Date of Pre bid meeting</b>	<b>20/06/2017 at 04:00PM</b>
<b>Last Date and Time for receipt of Tender</b>	<b>30/06/2017 till 03:00PM</b>
<b>Time and Date for Opening of Technical Bid</b>	<b>30 /06/2017 at 04:00PM</b>
<b>Venue</b>	<b>PDPM-IIITDM, Jabalpur, Campus</b>

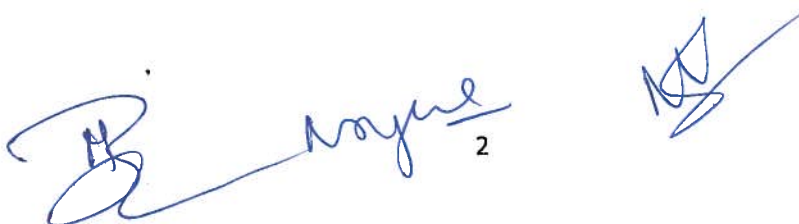
The tender document and details of terms and conditions can be downloaded from our website [www.iiitdmj.ac.in](http://www.iiitdmj.ac.in) between 05/06/2017 to 30/06/2017

A crossed demand draft of Rs. 500/- (Rupees Five Hundred only) towards Tender Fee (non-refundable) in favour of 'PDPM-IIITDM, Jabalpur' payable at Jabalpur should be submitted in a separate sealed envelope along with the tenders.

### **1) Earnest Money Deposit**

The earnest money deposit for the above is-

<b>Detail of item</b>	<b>Amount as EMD</b>
<b>HPC</b>	<b>Rs 25000.00</b>



## 2) Sealing and Marking of Bids

Both the bids (Technical as well as price bid) must be separately sealed and marked. The bids shall be marked as following.

- i) EMD and Tender Fee should be sealed in a separate envelope (ENVELOPE-ONE), duly super scribed as EMD and Tender Fee for Tender No.: IIITDMJ/P&S/Enq./2016-17/HPC/02
- ii) The Technical bid (Part 1) should be sealed in a separate envelope (ENVELOPE-TWO), duly super scribed as Technical Bid (Part 1) for Tender No.: IIITDMJ/P&S/Enq./2016-17 /HPC/02
- iii) The Price bid (Part 2) should be sealed in separate envelopes (ENVELOPE-THREE), duly super scribed as Price Bid (Part 2) for Tender No.: IIITDMJ/P&S/Enq./2016-17 /HPC/02
- iv) These THREE separate sealed envelopes are to be put in a bigger envelope (ENVELOPE-FOUR), which should also be sealed. Each of these FOUR envelopes MUST be super-scribed with following details:

<b>TENDER FOR SUPPLY &amp; INSTALLATION OF HPC</b>	
PDPM-IIITDM, JABALPUR	
TENDER REF: NO. IIITDMJ/P&S/Enq/2016-17/HPC/02	Dated:- 05/08/17
LAST DATE FOR SUBMISSION:-	
The Registrar,	
PDPM-Indian Institute of Information, Design and Manufacturing,	
Dumna Airport Road, Jabalpur-482005	
From:- M/s.....	
Contact No:.....	

2. The price bids of only those firms will be opened who are found to be technically qualified after evaluation based on the documents & information submitted by the tenderer. The bids submitted without tender fees and/or EMD will be summarily rejected and no further communications in this regards will be entertained.

### 1. Two / Double Bids

Tenders will have to be submitted in TWO PARTS i.e. (a) Technical Bid and (b) Price Bid, in two separate properly sealed covers clearly mentioning the type of Bid; on both these covers. The EMD and Tender fee will have to be submitted in a sealed cover. All these three envelopes shall be required to kept in a bigger envelope which will have the address of the firm submitting the tenders and the officer to whom the tender is addressed.



## 2. Opening of Bids

Part-I (Technical Bid) will be opened on the date, time and at the venue mentioned in this tender document. The Technical bids will be opened as per the schedule mentioned, in the presence of such of the tenderers who may wish to be present, either by themselves or through their authorised representatives. On finalization of the Technical Bid, Part-II (Price bids) of only those tenderers whose technical bid is found suitable after scrutiny will be opened. The date, time and venue of opening of the price bids will be intimated to all qualified tenderers by fax / e-mail / telephone etc. The Institute reserves the right to accept or reject any bid in part or full without assigning any reason whatsoever. The Institute will not hold any responsibility for postal loss or delay of any bid.

## 3. Financial Bid

The Performance of Financial bid is given at Annexure-III. The bidder should enter rates in the bid at the specified place. The quoted rates should be inclusive of all taxes transportation and installation charges. Rates entered anywhere else will not be entertained and summarily rejected.

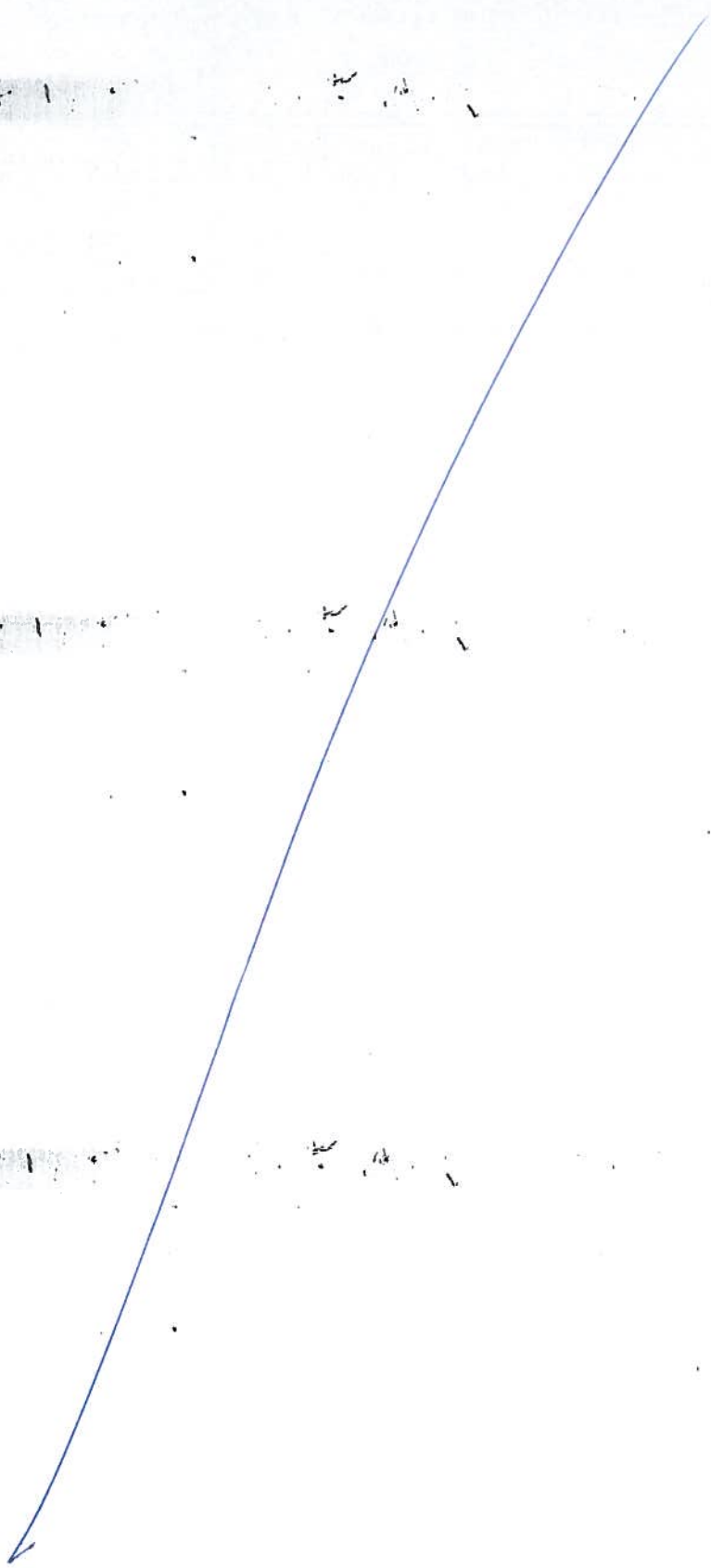
## 4. Eligibility criteria for Technical bid qualification:

- a) The Vendor should exclusively be an original manufacturer of HPC or experienced supplier of HPC who has successfully installed at least 1 HPC in reputed public and private research institutions in India in last 5 years. The copy of "Certificate of installation" issued to the bidder must be submitted with the application.
- b) The annual turnover of the tenderer during the last three financial years should not be less than Rs 10 Crores (Rupees ten Crore) for each year.
- c) The manufacturer/supplier should have valid certifications and attested copy of each of the same needs to be attached with the tender document.
- d) Audited financial statement and IT return for the last three years (FY; 2013-14; 2014-15, 2015-16) are required to be submitted along with technical bid.
- e) Copy of PAN, VAT, TIN, EXCISE & SERVICE TAX registrations is required to be submitted along with technical bid.
- f) Details & nature of maximum warranty period offered by the vendor are required to be



- submitted along with technical bid.
- g) **Earnest Money Deposit (EMD)** in form of Demand Draft/FDR and tender fee for **Rs. 500/**, in the form of Demand Draft only is acceptable. EMD of unsuccessful bidders will be refunded after finalisation of the tender.
- h) All the documents submitted including tender document should be duly certified by the authorised signatories.
- i) The bidder shall submit one copy of the tender document and addenda thereto, if any, with each page of this document should be signed and stamped to confirm the acceptance of the entire terms & conditions as mentioned in the of the tender enquiry document.
- submitted along with
- j) The firm must submit an Undertaking on its letter head that they have not been blacklisted by any State Government/Central Govt./PSU Department in India during last 3 years.
- k) All the pages/documents of the Tender should bear the dated signature (in ink) of the bidder/tendered with stamp of Firm. Any over-writing corrections & cuttings should bear dated initials of the tendered. Corrections should be made by writing again instead of shaping or over-writing.
- l) The bidders are requested to enclose only requisite and relevant data, which has been asked for.
- m) Each and every page of the submitted bid must carry the page numbers. The bidders are not allowed to make addition and alteration in the tender document. Conditional/modified tender are liable to be rejected.
- n) The tender/tenders NOT submitted in the prescribed format or Incomplete in any respect may be rejected.
- o) If any commercial or price details are found along with Technical bid (Part-1), such bids will be out rightly rejected.
- p) Any offer containing both the, Technical bid (Part-1) and Price bid (Part-2) in the same envelop will be out rightly rejected.
- q) The above documents shall be submitted in Technical bid (Part-1) failing which Price bid (Part-2) shall not be opened.
- r) **Installation and Commissioning:** Free of cost at IIITDM Jabalpur. The vendors are required to give an estimation of time required for installation, fine-tuning of the cluster and hand holding/training of the users in the technical bid. The vendor shall be responsible for setting up HPC Linux cluster using Enterprise Linux OS.

s) Vendor should also provide details of power and cooling requirements for the cluster with the proposal.



A handwritten signature in blue ink, consisting of a large, stylized initial 'B' followed by a checkmark-like flourish.

A second handwritten signature in blue ink, appearing as a series of connected loops and strokes.

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## ANNEXURE-I

### TECHNICAL SPECIFICATIONS OF High Performance Computer (HPC)

1. Master, cum Log In Node, Quantity (Qty): 1 Node	
Technical Specifications	
Processor(s)	2 x Intel® Xeon processor E5-2630v4 (10-Core, 2.2GHz, 25M Cache or higher)
RAM	64GB DDR4-2400 ECC RDIMM (Max 512GB, at least 8 DIMMs)
RAID	SATA RAID Controller with RAID 0,1 & 10 levels supported
HDD(s)	2x 2000GB, Enterprise SATA hot-plug HDDs  At least 4 Hot Swap SATA/SAS Hard Drive bays or higher
NIC	2 x Gigabit(10/100/1000Mbps) Ethernet ports on-board or thru AOC
Interconnect	40Gbps Single Port Infiniband HCA, with cable for connectivity of suitable length
Graphics	On-board graphics using Server Grade graphics controller
Management	On-board IPMI 2.0 with dedicated LAN and KVM over LAN support  with all required licenses
Exp Slot(s)	at least 1x PCI-E 3.0 x8 slot or more
Ports	1 Serial, 2 USB, 2 x Network, 1 x IB (40bps), 1 x Management, 1 x Video ports
Chassis	1U rack-mountable with sliding rails and other accessories
SATA DOM	Required 1 x Data on Module port default on motherboard
OS	System Certified with Windows and Linux(RHEL/SUSE)
P. Supply	At least 400W(1+1) Redundant Power Supplies (80PLUS platinum compliance)
Fans	Redundant and Hotswap
Display	17" TFT display, USB KBD, Mouse
Operating System (OS)	System Certified with Windows and Linux(RHEL,SUSE)

SATA DOM

*[Handwritten Signature]*

*[Handwritten Signature]*



**2. Compute Nodes (CPU-CPU)****Qty: 4 Nodes**

Technical Specifications of each node are as below:

Processor(s)	2 x Intel® Xeon processors E5-2650v4( 12-Core, 2.2GHz, 30M Cache or higher)
RAM	64GB DDR4-2400 ECC RDIMM (Max 512GB,at least 8 DIMMs)
RAID	SATA RAID Controller with RAID 0,1 & 10 levels supported
HDD(s)	1x 1000GB, Enterprise SATA hot-plug HDDs At least 3 or more Hot Swap SATA/SAS Hard Drive bays or higher
NIC	2 x Gigabit(10/100/1000Mbps) Ethernet ports on-board or thru AOC
Interconnect	IB QDR(40Gbps) Single Port Infiniband HCA,with cable for connectivity
Graphics	On-board graphics using Server Grade graphics controller
Management	On-board IPMI 2.0 with dedicated LAN and KVM over LAN support
	with all required licenses
Exp Slot(s)	at least 1x PCI-E 3.0 x16 slot or more (with a provision to support 1 x 100Gbps IB or Intel OPA HCA / HFI cards)
Ports	1 Serial, 2 USB, 2 x Network, 1 x QDR(40Gbps) ,1 x Management, 1 x Video ports
Chassis	1U rack-mountable with sliding rails and other accessories
OS	System Certified with Windows and Linux(RHEL,SUSE)
P. Supply	High Efficient Redundant Power Supplies (80PLUS Titanium Certified)
	80 plus report must be attached with bid
	dense node architecture permitted.
Fans	Redundant and Hotswap

**3. Hybrid Node Qty- 1 Node**

Technical Specifications of each Node is as below

Processor(s)	2 x Intel® Xeon® E5-2650V4 processors (12-Core, 2.2GHz, 30M Cache)
Accelerator	1 x Nvidia Tesla K40 GPGPU Card with dedicated 12GB memory
	provision to populate 2 double width GPGPU Cards in total , must have



	required expansion slots on board
Chipset	Intel® C612 Chipset
RAM	64GB DDR4-2133 or 2400 Mhz ECC RDIMM (Max 1TB, 16 DIMMs)
RAID	SATA (6Gbps) controller;HW RAID 0, 1, & 10
HDD(s)	1 x 1TB SATA 7.2K RPM Enterprise Hot Swap Hard Drives (8x 3.5" Hot-swap SATA3 HDD Bays)
NIC	2 x Gigabit(10/100/1000Mbps) Ethernet ports thru on board NIC
Graphics	On board Server Grade Graphics with dedicated graphics memory
Exp. Slots	at least 3x PCI-E 3.0 x16, and 2x PCI-E 2.0 or 3.0 slots
	Provision to populate dual GPGPU
Diagnostics	CPU and chassis environment,Thermal Control provision, PECI
	Thru LEDs for power on/off, HDD activity, Network activity, System Overheat
BIOS	Plug and Play (PnP), APM 1.x, PCI 2.x, ACPI 1.0 / 2.0 / 3.0 / 4.0,UEFI 2.3.x
OS	Enterprise Linux Operating System 64 Bit
Ports Graphics	1 Serial, 4 USB, 2 x LAN, 1 x Video, 1 x IB (40Gbps) Port
Chassis	max 4U rack-mountable or less , with required rack mountable kit and accessories
P. Supply	At least 900W redundant hot-plug power supplies (80 PLUS 94% efficient Certified)
	80 Plus report to be attached
Fans	Redundant and Hotswap

<b>4. Primary Communication Interconnect Switch Qty: 1</b>	
Ports Graphics	At least 12 x QDR (40Gbps) or better Interconnect ports
	with required number of Interconnect Cables and other accessories
	With rail kits and other rack mounting accessories
Warranty	3 Years Warranty comprehensive on-site
	Part code of respective Interconnect switch OEM

Intel or Mellanox

**5. Secondary Communication Network & Management Network**

**Qty:**

**1 Unit**

Gigabit Ethernet 24 Port Switch with required Cables and accessories

**6. 42U Rack**

**Qty: 1**

42U server rack, with required number of PDUs, cable managers, keyboard tray

and other required accessories

**7. Unified IB Embedded /Enabled Cluster Storage**

**Qty: 1**

**Technical Specifications**

Storage	File : SMB/CIFS, NFS, FTP, NFSoverRDMA, AFP, Recycle bin SMB
Protocols	Block : iSCSI, SRP (Configurable with NFSoverRDMA using Hi Speed Infiniband Interconnect)
Host Connectivity	Gigabit Ethernet : 2 (Max 6, with support for teaming for up to 12 ports) 10 Gigabit Ethernet : 0 (Max 2) Hi Speed Interconnect : 1 x 40Gbps Infiniband (Max 2), with cable Scalable to add FC(16Gbps) ports and 10G (SFP+ or RJ-45) ports in future Provision to upgrade storage with 100Gbps (Infiniband or Mellanox EDR) native support
RAID	RAID controller with 2GB battery backed cache, supports RAID 0, 1, 10, 5 & 6 Optionally upgradable to support SSD caching
HDDs	8 x 4000GB, 7200RPM, Enterprise SATA, hot-plug HDDs configured as RAID6 + hot-spare (2) Supports up to 12 HDDs in same enclosure & up to 240 HDDs using add-on JBODs
Processor	1 x Intel® Xeon processor (at least 8-Core, 2.0GHz or more).



Other	File Support & Journaling Support, Support for ADS & NIS , Volume Replication
	Hardware Monitoring & SNMP Support
License	Storage with Unlimited User License & Storage License. OEM must issue the license /ticket in the name of user for the same
Memory	32GB DDR4 ECC RDIMM embedded or thru inline modules
Chassis	2U rack-mountable with sliding rails. Only Enterprise storage systems are to be quoted with product datasheet and not the server class product.
Compliance	ISO 9001, 14001 certified, certification to be attached with bid
P. Supply	At least 500W, 1+1 redundant, hot-plug power supplies (80 PLUS Certified).

### 8. Compilers, Libraries, MPI (GNU open source) Software, & Installation

(cluster manager must be a license commercial S/W stack only from a reputed OEM)

- o GUI based Job monitoring and management
- o GUI based reporting,
- o Workload cum resource manager with policy-aware, resource-aware and topology-aware scheduling
- o Advance reservation support
- o Support of job submission through CLI, Web-services and APIs
- o Heterogeneous cluster support
- o Multi-cluster support
- o Preemptive and backfill scheduling support
- o Application integration support
- o Live reconfiguration capability
- o SLA/Equivalent
- o GPU Aware scheduling
- o Intuitive web interface to submit and monitor jobs
- o All open source mathematical libraries like BLAS, ATLAS, MPI, OPEN MP, Pthreads should be installed.
- o Queuing: A batch job queuing system like open PBS or SGE or HT Condor has to be installed and configured.

MPI: OpenMPI, MVAPICH

Libraries : Open Source Libraries for C, C++ & FORTRAN, MPI, MKL, Blas 1,2,3, Lapack, Scalapack etc.

Installation of Ab-Initio software: Amber, Gaussian, Gromacs, NAMD, ABINIT, Virtual Nano, ATK, ADF, Material studio, SAPT-2016, etc.

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Cluster Management: The cluster management stack with a GUI based cluster monitoring for all the cluster nodes.

Cluster monitoring and management software with the following features

- o Cluster manager with provisioning, monitoring and reporting capabilities
- o Support Package and Image based provisioning
- o Support Disk and diskless cluster deployment
- o Intuitive web interface to manage and customize the cluster
- o Customizing networks and compute node profiles through GUI
- o Customizing compute nodes to max, upto changing kernel parameter
- o Able to Push configuration changes and updates to the compute nodes without reinstalling and rebooting.



o Able to push

o Able to push



Raymond

**Terms and Conditions of the Tender**

- We may need to shift cluster from temporary lab to permanent lab in near future. The vendor should take the responsibility for shifting, installation, power supply, connection, etc if required in free of cost.
- Bidder must have experience in the HPC domain with previous at least 2 HPC installations in India including for Govt education & research organisations.
- Server , Storage OEM must be ISO 9001, ISO 14001 Certified.
- Bidder must submit MAF/Authorization Certificate from the Server, Storage, and Interconnect OEMs.
- Server OEM must be listed in Top500.Org listing (latest) with at least 2 entries.
- Server , Storage OEMs must have at least 2 previous HPC installations including at Govt Education & research organisations in India during last five years.
- Storage OEM must have supplied Storage as part of HPC Clusters during last 5 years.
- The make of the server should be clearly mentioned in the proposal and should only be of IBM/HP/Dell/Supermicro/Fujitsu.

**Other conditions**

1. **Rates:-** Rates quoted should be in Indian Rupees(INR) on FOR destination at PDPM-IIITDM, Jabalpur on **DOOR Delivery basis**, inclusive of all the charges including all taxes, transportation and installation charges, etc.
2. **Validity:** The **quoted** rates must be valid for a minimum period of **120 days** which shall be reckoned from the date of opening for financial bid.
3. In case the tenderer withdraws, modifies or changes his offer during the validity period, bid is liable to be rejected and the earnest money deposit shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required without changing any terms and conditions etc. of their original tender.
4. **Warranty/Guarantee:**
  - (i) Suppliers must give the comprehensive warranty in writing that everything to be supplied by them hereunder shall be free from all defects and faults in material, workmanship and material shall be in full conformity with the specifications. The period of warranty shall not be less than three years from the date of successful installation of HPC.

(ii) The supplier shall confirm that the goods supplied are new, unused and of the most recently manufactured and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract.

(iii) The supplier shall further warrant that all goods supplied shall have no defect arising from design materials or workmanship or from any act or omissions of the supplier that may arise under normal use of the supplied goods in the conditions prevailing in the Institute

(iv) All charges with regard to supply of spare parts, labour, travel, per diem and accommodation to supplier's staff, etc. shall be borne by the supplier during the period of warranty. The Institute shall not pay any additional charges for services rendered during the warranty period.

#### 5. Contract:-

i) The technically qualified vendor who is awarded the order will have to give acceptance within 05 days on receipt of such communication. Further, an agreement having terms and conditions laid down in tender documents will require to be signed on prescribed format within 05 days of acceptance of such order.

ii) The agreement would be signed on a non-judicial stamp paper of Rs 100 and cost of which is to be borne by the vendor.

#### 6. Defect Liability clause

i) In case of any loss, breakage / damage and manufacturing defects are detected in the supplied material; it shall be replaced / repaired by the manufacturer/supplier free of cost and without any charges whatsoever.

ii) The supplier will remain responsible for any defect arising out of defective or improper materials or workmanship in the work for a period of **three years** from the date of installation and they shall be bound to make good the same at their own cost or in case of failure to do so, the Institute may cause the same to be made good by other alternative agency and deduct the expense from any sum that may be due and any time there after may become due to the supplier or from security deposit lying with the Institute. The maximum downtime during warranty period should not be more than 48 hours from the time the complaint is locked.



## 7. Enhancement in Rates

The tender rates shall remain valid applicable during the whole execution period and the supplier shall not be entitled to any price variation or escalation.

## 8. Delivery:

Unless otherwise stated delivery, installation and commissioning of furniture at PDPM-IIITDM, Jabalpur will have to be completed within **04-06 weeks** from the stipulated date of start mentioned in the purchase order.

9. Printed conditions of the firm sent along with the tender, if any, shall not be binding on PDPM-IIITDMJ.

10. **Late and delayed submission of tenders:** Late and delayed tender will not be considered. If, in any case, unscheduled holiday occurs on prescribed closing/opening date, the next working day shall be the prescribed date of closing/opening.

11. Conditional bids will be summarily rejected.

## 12. Terms of Payment:

a) Payment will be made

I) 70 % on successful delivery as per ordered quantity and specification

II) 30 % subject to successful installation of HPC and submission of PBG (Security deposit) i.e. 5 % of the order value.

b) The Performance Bank Guarantee in the form of Demand Draft/FDR from any Nationalised Bank including SBI shall have to be submitted within 21 days from the date of issue of Purchase Order. The value of PBG shall be 5 % of the value of Purchase Order and this PBG has to be valid up to 60 days beyond all contractual/ obligations .

13. All legal disputes shall be subjected to jurisdiction of Jabalpur court(s) only.

14. The tenderer shall quote only one specific make / model, options shall not be quoted. Quoting of options and terms like better/ equivalent/latest/OEM etc. Will lead to technical disqualification.

15. **Penalty for delayed Delivery:-** In the event of delayed delivery, Installation & Commissioning i.e. after the expiry of the period as mentioned in P.O., the vendor shall be liable for a penalty



deduction at a rate 1.5% per month of delay to be computed on per day basis. The maximum levy of compensation shall be 10% of the contract value.

19. Incomplete Tenders: Bidders are required to submit all relevant documents as per the checklist along with technical bid. Failing which their bid will be summarily rejected.

### IMPORTANT

1. In case of any disputes, the decision of the Director of this Institute shall be final and binding on the Bidders.

2. Any other term/rule/clause not specifically mentioned here, GFR shall be referred.

Note: - All documents should necessarily to be submitted at the time of submission of tenders failing which tenders may be rejected.

binding on the Bidder

(Signature of Tender with seal)



binding on the Bidder



copy

**ANNEXURE-III**  
**FINANCIAL BID FOR ITEMS**

Sl.No	Name of item	Unit Price (Inclusive of taxes, freights, installation, etc)
1	HPC (as per annexure-1)	



