



INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR KHARAGPUR – 721302

SUB:PROCUREMENT OF COMPUTING EQUIPMENT

Tender Notice No. IIT/EE/OTG/SM/EQ/2018-19/01 Date: 10.10.2018

Indian Institute of Technology Kharagpur, an Institute of National Importance, invites sealed quotations from reputed Original Equipment Manufacturers (OEMs) or their Authorized representatives & General Suppliers for the supply of **Servers and Workstations** for the Department of Electrical Engineering.

Interested vendors are requested to send their sealed bids under a **two cover system** as per requirement mentioned in tender document, along with the Technical Specifications & Compliance Certificate (as mentioned in **Annexure – I**) of the tender document.

Details are also mentioned in the Institute website www.iitkgp.ac.in [link: **Tenders**].

The proposal has to be sent in a sealed packet, containing two separate sealed envelopes (**Technical Bid** and **Price Bid**) duly superscripted with Reference Number (**Tender Notice No. IIT/EE/OTG/SM/EQ/2018-19/01** Date: **10.10.2018**) to the office of Prof. Siddhartha Mukhopadhyay, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur, P.O. Kharagpur Technology, PIN: 721302 **on or before 09.11.2018 at 3.00 pm.**

The **technical bids will be opened on 09.11.2018 at 4.00 pm** in the **Office of Prof. Siddhartha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur** in the presence of the vendors/ or their authorized representatives. Price bids will be opened (to be notified separately) only of those firms, who will be found technically qualified/short listed, after evaluation of their technical bids.

Prof. Siddhartha Mukhopadhyay
PI, CNE_OTG, IIT Kharagpur

Encl: Annexure – I & II

Copy to:

1. Institute website
2. Jt. Registrar (Stores & Purchase)
3. CPP Portal
4. Chairman, Purchase Committee
5. Notice Board

Procurement of Computing Equipment

It will consist of the following equipment as per the specifications given in **Annexure I**.

Sl. No.	Equipment	Quantity
1	Server A	1
2	Server B	1
3	Server C	1
4	Graphics Workstation A	1
5	Graphics Workstation B	2
6	Graphics Workstation C	5
7	Graphics Workstation D	1
8	Computing Workstation	3

SCOPE OF WORK

1. Delivery of all mentioned equipment at IITKharagpur campus.
2. The bidder must install the equipment including all hardware and software installations as per specifications given in Annexure-1. The supplied servers should be mounted on Rack (to be provided by IITKharagpur).
3. Bidder to ensure that the hardware and software components are compatible with each other, and provide all necessary cables, mounting rails and any other accessories, hardware or software, necessary for connecting and installing the supplied components. No additional cost will be paid for this during or after installation.

TERMS AND CONDITIONS

1. All licenses must be perpetual with free upgrades for the entire warranty period. All updates of licensed software components must be provided free of cost for the entire warranty period.
2. The bidder should be ISO certified by ISO 9001 and ISO 14001.
3. The bidder should be Original Equipment Manufacturer (OEM) or authorized distributor of the systems (Attach documentary proof). The authorization letter issued by the OEM (specifically against this tender) should be enclosed. If the OEMs for some of the equipment are different, authorization letters must be enclosed for each OEM.
4. Any service request must be attended to within the next business day. Both the bidder and the OEM must have sales and support service centers in Eastern India. The bidder should provide the locations of sales and support service centers of both the bidder and the OEM in India. If the OEM will provide first level support for some equipment, certification to this effect from the OEM must be provided.
5. The bidder must have executed at least three orders of similar nature in India in the last three years (PO Copies or successful completion certificates to be provided).
6. Technical bid should contain all relevant technical details; printed technical leaflet of models quoted and other details, which may be necessary to ensure that the offer is complete in all respects, e.g., technical specifications, etc.
7. Technical bid should also contain a Compliance Certificate duly signed by the bidder.
8. Price should be **quoted only in Indian Rupees** on free delivery at site **inclusive of all**

taxes and incidental charges.The unit price without tax and the tax breakups should be shown separately for each item. Prices for software components, if any, must be shown as separate line items.

9. IITKharagpur is registered under DSIR, Govt. of India. GST rate for scientific goods is 5% as per the Notification No. 47/2017 - Integrated Tax (Rate) dated 14th November, 2017. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder.
10. IITKharagpur is eligible for exemption for payment of Customs Duties in terms of Government of India Notification No.51/96-Customs dated 23.07.96. Necessary certificate in this regard will be issued as per requirement and on request of the successful bidder.
11. Item wise L1 Bidder will be decided based on the price of the item mentioned in the specification.
12. Payment Terms: 90% Payment shall be made after successful installation of the Equipment/System duly certified by PI, CNE_OTG. Balance 10% may be released against submission of Performance Bank Guarantee to the tune of 10% of the total purchase order value. The Performance Bank Guarantee shall be issued from any Commercial Bank, validity of which shall be five years plus 60 days drawn on any commercial bank.
13. Warranty: 5 years comprehensive onsite OEM warranty, from the date of successful installation of the equipment. The selected bidder will ensure the availability of services from professionally qualified team during implementation and to provide the onsite comprehensive warranty for FIVE YEARS on all items. All products should have 5 years 8 x 5 x NBD (Next Business Day) support commitment with back-to-back agreement with OEM. In case of equipment failure, IIT Kharagpur should be able to log case with the OEM both through the bidder and directly without bidder intervention. Emergency response team should be available from OEM directly in case of any critical failures.
14. Delivery Period: The equipment should be supplied within 8 weeks from the date of receipt of the Purchase Order.
15. Liquidated Damage: In the event of failure to deliver the stores beyond the specified date, liquidated damages @ 1% per month or part thereof in respect of the value of stores will be deducted, subject to a maximum of 5%; alternately the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of the vendor.
16. Tender Fee: An amount of Rs. 1,000.00 (Rupees One thousand only) as tender fee (nonrefundable) has to be paid. The payment shall be made by Demand Draft from any Bank in favour of "Indian Institute of Technology Kharagpur", payable at "Kharagpur". Quotation will not be accepted without the Tender Fee. Tender fee should be enclosed separately in an envelope and stapled with the Technical Bid.
17. Earnest Money Deposit (EMD): An amount of 1,00,000.00 (Rupees one lakh) only (Refundable) in the form of Demand Draft drawn in favour of "Indian Institute of Technology Kharagpur", payable at Kharagpur or Bank Guarantee as per format at Annexure-II is to be submitted. E.M.D. should be enclosed separately in an envelope and stapled with the Technical Bid document superscribed with the tender no. The validity of the EMD should be 6 (six) months from the date of issue. Any bid without EMD will summarily be rejected. No interest is payable on EMD. EMD will be refunded to the unsuccessful bidder after finalization of the tender process. No interest is payable on Security Deposit. Security Deposit shall be forfeited if the selected vendor fails to execute the contract after receiving

the same.

[NOTE: IITKharagpur will give exemption for submission of tender fee and EMD who are registered with MSME or Central Purchase Organization or startups as recognized by DIPP as per revised rule 170 of GFR-2017 only. However proper and valid document in this regard must be submitted by the bidders in support of their claim.]

18. Bid Submission: Technical Bid and Price Bid should be submitted in two separate sealed envelopes quoting reference number on the top of the envelope. Technical bid should have a copy of the price bid with costs blanked out. Tender Fee and EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents.
19. Acceptance of Tender: The authority of IIT, Kharagpur reserves the right to accept/reject any or the entire tender bids received without assigning any reason thereof.
20. Conditional offer will not be accepted.
21. Period of Validity: Bids shall remain valid for acceptance for a period of 120 days from the date of opening of the price bid. The benefit of downward prices (revision on account of budget/financial policy, tax revision, etc.) should be given to IIT Kharagpur by the selected OEM/vendor.
22. Past performance of the vendors will be judged at the time of Technical Evaluation.
23. The Institute does not bind itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.
24. Bidders should enclose the following documents:
 - i. Tender Fee.
 - ii. Earnest Money Deposit (EMD).
 - iii. Certificate of Registration/Trade License.
 - iv. PAN number and GST registration number.
 - v. IT returns for the last three years.
 - vi. Copy of product literature technical leaflet, wherever applicable for which the prices have been quoted should invariably be enclosed.
 - vii. Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration.
 - viii. Copy of ISO Certification (as necessary).
25. **All tenders are to be submitted or handed over to the office of Prof. Siddhartha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur.** The bids (technical and price bids) once submitted shall be the property of the Institute and shall not be returned to the vendor in future.
26. **The person/officer signing** the tender/bid documents should be delegated with an appropriate authority.
27. **Opening of Price Bids:** The Price Bid(s) of only those vendor(s) who are found technically qualified will be opened and the same will be opened before the technically qualified vendor(s). **The date for opening of price bids will be notified separately.**
28. Bidder or his/her authorized representative (with proper authorization letter for opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.
29. The addendum/corrigendum if any shall be published on Institute's Website and on

CPPPortal.

30. The Institute at its discretion may change the quantity at any time before placing the order.
31. Copy of mandatory test reports, national testing/reliability and endurance test reports etc., certified or conducted at the manufacturing site, granted by the bureaus/quality control departments/national testing laboratories, as appropriate, should be enclosed.
32. Deviation from Specifications: It is in the interest of the tenderer to study the specifications in the tender schedule thoroughly before quoting so that, if the tenderer makes any deviations, the same are prominently brought out in the body of the tender. If you need to add any optional items to your system in order to meet our specifications, you are requested to quote for the total including the option required to suit our requirements. Otherwise, your tender will not be considered at all.
33. Guarantee: The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications.
34. Jurisdiction: All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued i.e. Jurisdiction of KOLKATA HIGH COURT. Acceptance to this effect is also necessary at the time of opening of Technical Bid.

35. **Important**

- (a) Abids submitted with false information will not only be rejected but also the OEM/vendor will be debarred from participation in future tendering process.
- (b) The OEMs/Vendors need to submit a certificate that they are not currently debarred or blacklisted in IIT Kharagpur for any supplies, products or services, or at present in any national organization or educational institute/university.
- (c) In case of any dispute, the decision of the Director of this Institute shall be final and binding on the bidders.
- (d) For any query pertaining to this bid document, correspondence be addressed to:
Prof. Siddhartha Mukhopadhyay,
Department of Electrical Engineering
Indian Institute of Technology, Kharagpur 721302
siddhartha.mukhopadhyay@gmail.com / patrashamit@yahoo.com
- (e) In case the due date for submitting tender **happens to be a holiday, the same will be accepted on the next working day.** The timings will however remain unchanged.
Please Note that the Institute remains closed during Saturdays & Sundays.

Annexure I

1. Server A – 1 no.

Sl.	Parameter	Minimum Specifications
1	Form Factor	1u Rack form factor with sliding rails to fit into industry standard 19" Server Rack
2	Number of CPU	One, Upgradable to 2
3	Processor Speed	Intel® Xeon® Gold 5122 Processor, 4 core, 16.5M Cache, 3.60 GHz
4	Chipset	Latest OEM Chipset supporting and optimized for the above processor
5	Memory	256GB RDIMM 2666MHz Registered ECC, expandable to 1.5TB
6	Memory Slots	24 DIMM Slots
7	Storage	3 TB usable in RAID 5 with 10K RPM hot swap SAS Disk
8	HDD Bays	10 or more x2.5" HDD bays supporting SAS, SATA, Near-line SAS, SSD drives
9	RAID levels	Support for RAID 0,1,5,6; populated with 12Gbps SAS RAID controller with 2GB Cache
10	Ports and Slots	3 USB ports (including one USB3.0), 1 Serial, graphics port
11	Slots	3x PCI 3.0 slots for expansion
12	Optical Drive	DVD Drive RW
13	Network Interface	Dual-port 10 Gb Ethernet with 21GbE (TOE and iSCSI offload available on 10 GbE ports)
14	Power Supply and Fans	Redundant Titanium rated efficient Power Supply (at least 750 Watts each) to sustain above configuration. Hot Plug and redundant fans
15	Server Management	OEM embedded controller with IPMI 2.0 compliance and Server Management Tool from same OEM.
16	Operating System	Red Hat Enterprise Linux Server OS: Standard (Physical or Virtual Nodes) for 2 sockets and 1 guest, 1 year support subscription.
17	Operating System and Platform support	Microsoft Windows Server 2012, Microsoft® Windows® HPC Server 2008, Red Hat Enterprise Linux, Microsoft® Windows Server® 2012 Hyper-V, VMware® vSphere Version, Citrix® XenServer
18	Compliances	FCC, UL, ROHS
19	Industry Certifications	The quoted server model should have published benchmark on spec.org website.
20	Industry Standard Support	User-selectable power cap (subsystems throttle to maintain the specified power cap), ACPI 3.0 Compliant, PCI 2.3 Support compliant, PXE and WOL Support, IPv4 and IPv6 support

2. Server B – 1 no.

Sl.	Parameter	Minimum Specification
1	Processor	Dual Intel Xeon GOLD6000 series, 8 core or more, 3.7GHz (base frequency) or higher, Cache 24.75MB L3 or higher
2	Motherboard	Dual Processor OEM Motherboard with all necessary components
3	Chipset	Intel C620 Series
4	Memory	64 GB DDR4 2666MHz Registered ECC RAM or higher
5	Memory Expandable	256 GB or more, with extra DIMM slots to accommodate the same without removing the original RAM
6	Storage	3 TB usable in RAID 5 with 10K RPM hot swap SAS Disk
8	Optical Drive	Internal SATA DVD RW drive
9	Network Interface	2 x 10 Gbps
10	I/O Ports	At least 4 USB port of which at least 2 must be USB 3.0 1 HDMI out
11	Bus Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
12	Power Supply	Dual redundant (1+1) hot-plug power supplies, 750W or higher, Gold certified
13	Fans	Redundant hot-swap fans
15	OS Support	Must be compatible with latest versions of Ubuntu, CentOS, Red Hat Enterprise Linux, and Windows Server. Must be compatible with the latest versions of KVM, VMWARE & Hyper-V.
16	Form Factor	Rack
17	Compliances	FCC,UL,ROHS

3. Server C – 1 no.

Sl.	Parameter	Minimum Specification
1	Processor	Single Intel Xeon GOLD 5122 Processor, 4 core, 3.6GHz (base frequency) or higher, Cache 16.5 MB L3 or higher, TDP 105W
2	Motherboard	Dual Processor OEM Motherboard with all necessary components
3	Chipset	Intel C620 Series
4	Memory	64 GB DDR4 2666MHz Registered ECC RAM or higher
5	Memory Expandable	256 GB or more, with extra DIMM slots to accommodate the same without removing the original RAM
6	Hard Disk	3 TB usable in RAID 5 with 10K RPM hot swap SAS Disk
8	Optical Drive	Internal SATA DVD RW drive
9	Network Interface	2 x 10 Gbps
10	I/O Ports	At least 4 USB port of which at least 2 must be USB 3.0 1 HDMI out
11	Bus Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
12	Power Supply	Dual redundant (1+1) hot-plug power supplies, 750W or higher, Gold certified
13	Fans	Redundant hot-swap fans
15	OS Support	Must be compatible with latest versions of Ubuntu, CentOS, Red Hat Enterprise Linux, and Windows Server. Must be compatible with the latest versions of KVM, VMWARE & Hyper-V.
16	Form Factor	Rack
17	Compliances	FCC,UL,ROHS

4. Graphics Workstation A – 1 no.

Sl.	Parameter	Minimum Specification
1	Processor	Dual Intel Xeon GOLD6000 series, 20 core or more, 2.0 GHz (base frequency) or higher, Cache 27.5 MB L3 or higher, TDP 125W
2	Chipset	Intel C620 Series
3	Motherboard	Dual Processor OEM Motherboard (FCLGA3647 socket) with all necessary components
4	Memory	12x16 GB DDR4 2666Mhz SDRAM or higher
5	Memory Slot	At least 12x DIMMs DDR4 2666 RDIMM/LRDIMM
6	GPU	Single NVIDIA TITAN V, Volta architecture, At least 5120 CUDA Core or higher, 12288 MB HBM2 video memory, Base clock 1200 MHz, 3 x DisplayPort, 1 x HDMI connector
7	Hard Disk	Single 500 GB 2.5 inch internal SSD Single 2 TB SATA HDD, 7200 RPM or higher
8	Monitor	27" or higher Wide Screen Full HD monitor
9	Network Interface	Integrated Gigabit (10/100/1000)
10	Wi-Fi Card	802.11/b/g/n/ac wireless card, (Antenna should connect to the Wi-Fi card without any extension wire)
11	Mouse	2 Button USB Optical Scroll Mouse (Same OEM make)
12	Keyboard	104 Keys USB keyboard (Same OEM make)
13	Optical Drive	Internal SATA 16x or better DVD +/- R/W Drive
14	I/O Ports	At least 4 USB port of which at least 2 USB 3.0 At least 1 (RJ45) Gigabit Ethernet 10/100/1000
15	Expansion Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
16	PSU	850W or higher PSU with gold certification
17	OS Certifications	The hardware must be fully compatible with latest versions of Linux (Ubuntu, CentOS, RedHat, etc.) and Windows 7 Professional, Windows 10 Professional
18	PC cooling	Hydro Liquid CPU Cooler and high speed chassis fan

5. Graphics Workstation B – 2 nos.

Sl.	Parameter	Minimum Specification
1	Processor	Dual Intel Xeon GOLD6000 series, 12 core or more, 3.2 GHz (base frequency) or higher, Cache 24.75 MB L3 or higher
2	Chipset	Intel C620 Series
3	Motherboard	Dual Processor OEM Motherboard (FCLGA3647 socket) with all necessary components
4	Memory	12x16 GB DDR4 2666Mhz SDRAM or higher
5	Memory Slot	At least 12x DIMMs DDR4 2666 RDIMM/LRDIMM
6	GPU	Single NVIDIA GTX 2080TI, At least 4352 CUDA Core, 11 GB of GDDR6 Memory or better, Boost Clock 1635 MHz
7	Hard Disk	Single 500 GB 2.5 inch internal SSD Single 2 TB SATA HDD, 7200 RPM or higher
8	Monitor	27" or higher Wide Screen Full HD monitor
9	Network Interface	Integrated Gigabit (10/100/1000)
10	Wi-Fi Card	802.11/b/g/n/ac wireless card, (Antenna should connect to the Wi-Fi card without any extension wire)
11	Mouse	2 Button USB Optical Scroll Mouse (Same OEM make)
12	Keyboard	104 Keys USB keyboard (Same OEM make)

13	Optical Drive	Internal SATA 16x or better DVD +/- R/W Drive
14	I/O Ports	At least 4 USB port of which at least 2 USB 3.0 At least 1 (RJ45) Gigabit Ethernet 10/100/1000
15	Expansion Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
16	PSU	850W or higher PSU with gold certification
17	OS Certifications	The hardware must be fully compatible with latest versions of Linux (Ubuntu, CentOS, RedHat, etc.) and Windows 7 Professional, Windows 10 Professional
18	PC cooling	Hydro Liquid CPU Cooler and high speed chassis fan

6. Graphics Workstation C – 5 nos.

Sl.	Parameter	Minimum Specification
1	Processor	Single Intel Xeon GOLD, 20 core or more, 2.0 GHz (base frequency) or higher
2	Chipset	Intel C620 Series
3	Motherboard	Dual Processor OEM Motherboard (LGA 3647 socket) with all necessary components
4	Memory	8x16 GB DDR4 2666Mhz SDRAM or higher
5	Memory Slot	At least 12x DIMMs DDR4 2666 RDIMM/LRDIMM
6	GPU	Pascal architecture, At least 3840 CUDA Core or higher, 12 GB of GDDR5X Memory, Boost Clock 1582 MHz, and PCIe slot
7	Hard Disk	Single 500 GB 2.5 inch internal SSD Single 2 TB SATA HDD, 7200 RPM or higher
8	Monitor	27" or higher Wide Screen Full HD monitor
9	Network Interface	Integrated Gigabit (10/100/1000)
10	Wi-Fi Card	802.11/b/g/n/ac wireless card, (Antenna should connect to the Wi-Fi card without any extension wire)
11	Mouse	2 Button USB Optical Scroll Mouse (Same OEM make)
12	Keyboard	104 Keys USB keyboard (Same OEM make)
13	Optical Drive	Internal SATA 16x or better DVD +/- R/W Drive
14	I/O Ports	At least 4 USB port of which at least 2 USB 3.0 At least 1 (RJ45) Gigabit Ethernet 10/100/1000
15	Expansion Slots	1 or more PCIe 3.0 x16 Slot, 2 or more PCI/PCIe Slot
16	PSU	750W or higher PSU with gold certification
17	OS Certifications	The hardware must be fully compatible with latest versions of Linux (Ubuntu, CentOS, RedHat, etc.) and Windows 7 Professional, Windows 10 Professional (certification to be included)
18	Certification	For OEM: ISO 9001 and 14001. For Quoted Model: UL/FCC/ERTL (STQC) for safety, EPEAT GOLD/RoHS.

7. Graphics Workstation D – 1 no.

Sl.	Parameter	Minimum Specification
1	Processor	Single Intel Xeon GOLD 6000 series, 20 core or more, 2.0 GHz (base frequency) or higher, Cache 27.5 MB L3 or higher, TDP 125W
2	Chipset	Intel C620 Series
3	Motherboard	Dual Processor OEM Motherboard (FCLGA3647 socket) with all necessary components

4	Memory	8x16 GB DDR4 2666Mhz SDRAM or higher
5	Memory Slot	At least 12x DIMMs DDR4 2666 RDIMM/LRDIMM
6	GPU	Single NVIDIA GTX 2080TI, At least 4352 CUDA Core, 11 GB of GDDR6 Memory or better, Boost Clock 1635 MHz
7	Hard Disk	Single 500 GB 2.5 inch internal SSD Single 2 TB SATA HDD, 7200 RPM or higher
8	Monitor	27" or higher Wide Screen Full HD monitor
9	Network Interface	Integrated Gigabit (10/100/1000)
10	Wi-Fi Card	802.11/b/g/n/ac wireless card, (Antenna should connect to the Wi-Fi card without any extension wire)
11	Mouse	2 Button USB Optical Scroll Mouse (Same OEM make)
12	Keyboard	104 Keys USB keyboard (Same OEM make)
13	Optical Drive	Internal SATA 16x or better DVD +/- R/W Drive
14	I/O Ports	At least 4 USB port of which at least 2 USB 3.0 At least 1 (RJ45) Gigabit Ethernet10/100/1000
15	Expansion Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
16	PSU	750W or higher PSU with gold certification
17	OS Certifications	The hardware must be fully compatible with latest versions of Linux (Ubuntu, CentOS, RedHat, etc.) and Windows 7 Professional, Windows 10 Professional
18	PC cooling	Hydro Liquid CPU Cooler and high speed chassis fan

8. Computing Workstation – 3 nos.

Sl.	Parameter	Minimum Specification
1	Processor	Dual Intel Xeon GOLD 6000 series, 12 core or more, 3.2 GHz (base frequency) or higher, Cache 24.75 MB L3 or higher
2	Chipset	Intel C620 Series
3	Motherboard	Dual Processor OEM Motherboard (FCLGA3647 socket) with all necessary components
4	Memory	12x16 GB DDR4 2666Mhz SDRAM or higher
5	Memory Slot	At least 12x DIMMs DDR4 2666 RDIMM/LRDIMM
6	Hard Disk	Single 500 GB 2.5 inch internal SSD Single 2 TB SATA HDD, 7200 RPM or higher
7	Monitor	27" or higher Wide Screen Full HD monitor
8	Network Interface	Integrated Gigabit (10/100/1000)
9	Wi-Fi Card	802.11/b/g/n/ac wireless card, (Antenna should connect to the Wi-Fi card without any extension wire)
10	Mouse	2 Button USB Optical Scroll Mouse (Same OEM make)
11	Keyboard	104 Keys USB keyboard (Same OEM make)
12	Optical Drive	Internal SATA 16x or better DVD +/- R/W Drive
13	Graphics	Intel Integrated HD Graphics
14	Audio	Internal audio Speaker
15	I/O Ports	At least 4 USB port of which at least 2 USB 3.0 At least1 (RJ45) Gigabit Ethernet10/100/1000
16	Expansion Slots	Minimum 2 x PCIe 3.0 x16 slots, 2 x PCIe 3.0 x8 slots
17	PSU	850W or higher PSU with gold certification
18	OS Certifications	The hardware must be fully compatible with latest versions of Linux (Ubuntu, CentOS, RedHat, etc.) and Windows 7 Professional, Windows 10 Professional
19	PC cooling	Hydro Liquid CPU Cooler and high speed chassis fan

ANNEXURE – II

MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD

Whereas(hereinafter called the "tenderer") has submitted their offer dated for the supply of (hereinafter called the "tender") against the purchaser's tender Notice No.

KNOW ALL MEN by these presents that WE of having our registered office at are bound unto (hereinafter called the "Purchaser") in the sum of for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this Day of 20

THE CONDITIONS OF THIS OBLIGATION ARE

- (1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:
 - (a) If the tenderer fails to furnish the Performance Security for the due performance of the contract.
 - (b) Fails or refuses to accept/execute the contract.

WE undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorized officer of the Bank)

Name and designation of the officer

Seal, name & address of the Bank and address of the Branch