

**DIRECTORATE OF TECHNICAL EDUCATION & TRAINING  
GOVERNMENT OF WEST BENGAL**

**Tender for IT infrastructure , Photocopier &  
Library Management Software etc. of  
Polytechnic(s) of West Bengal**

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**NIT No: ICA-T 153(3)/ 2011**

**Dated: 01.07.2011**

## **Notice Inviting Tender**

NIT No.: ICA-T 153(3)/ 2011

Dated: 01.07.2011

**Sub: Supply, Installation and Implementation for up gradation of IT infrastructure , Photocopier & Library Management Software etc. of Polytechnic(s) of West Bengal**

Quotations are invited by the Director of Technical Education & Training, Govt. of West Bengal from reputed firms / concerns / agencies / distributors / dealers for supply and installation of (1) 20 user server with allied set-up and internet connectivity, (2) Desktop Computers, (3) high speed photocopiers with zoom facility, (4) Library Information System Software, and (5) making provision of Local Area Networking of computers as per varied requirements and space availability at the following Govt. Polytechnics :

I.C.V. Polytechnic, Jhargram, Paschim Medinipur

Hooghly Institute of Technology, Hooghly

Women's Polytechnic, Chandannagar, Hooghly

Asansol Polytechnic, Asansol, Burdwan

Purulia Polytechnic, Purulia

Raiganj Polytechnic, Uttar Dinajpur and

B.P.C. Institute of Technology, Krishnagar, Nadia.

Necessary tender documents can be collected from the office of the Director of Technical Education & Training, West Bengal at Bikash Bhavan, 10<sup>th</sup> Floor, Salt lake City, Kolkata - 700 091 on all working days between 12.0 Noon and 3.0 p.m. **up to 15<sup>th</sup> July, 2011.**

Sealed offer in three part System (Part-I: EMD, IT, ST/VAT & other related documents Part-2 Technical Bid & Part-3 Financial Bid) are invited from resourceful Vendors/Contractors having experience in such work for establishment of above Contract.

***Detailed Technical specifications are available in Annexure***

**Document is available in Website : [www.wbtet.nic.in](http://www.wbtet.nic.in) , & [www.wbdtet.gov.in](http://www.wbdtet.gov.in)**

## Terms & Conditions

- a) The Hardware and network suppliers are preferably from reputed manufacturers/dealers/distributors with sales and after-sales service facilities at locations as mentioned in the advertisement. In case of sales through dealers/distributors, concerned dealers/distributors of any reputed manufacturers should enclose valid certificate of authorization in original from the manufacturer, with the quotation.
- b) Updated Income Tax, VAT/ Sales Tax etc. clearance certificates are to be submitted with the tender.
- c) The vendors participating in tender should submit Earnest Money Deposit (EMD) in the form of bank demand draft in favour of Deputy Director (Audit & Accounts) of Directorate of Technical Education & Training, Govt. of West Bengal payable at Kolkata.

Part	EMD for Sl. No.	Amount
A	EMD for sl no 1 to 26	- 7 no. D.D. @ Rs. 20,000/- per Polytechnic
B	EMD for sl no 27	- 1 no. D.D. @ 8,000/- per Polytechnic
C	EMD for sl no 28	- 1 no. D.D. @ 12,000/- per Polytechnic

- d) Tenders should be submitted separately for Part- A, Part-B, & Part-C clearly mentioning the part for which submitted on the Top of envelop. ( e.g "for Part- A" etc.)
- e)
- i. Prebid Query may be submitted in writing till **18.07.2011 upto 2 PM**, in the original office Pad / Letterhead.
  - ii. Prebid Query will be replied on **22.07.2011** at 4 PM.
  - iii. Filled up sealed tenders to be submitted in duplicate (both separately sealed) along with softcopy in pdf format in CD . Each packet should consist 3 separate packets, one consisting updated Income Tax, VAT/ Sales Tax clearance certificates etc. ( as mentioned in the pre-qualification bid also) & EMD, the second one consisting the Technical Bid, ( details/ specifications of the offer), and third one containing the Price Bid offered. The contents of the packets should be mentioned on the top in writing as 1) EMD, IT, ST/VAT & other related documents 2) Technical Bid & 3) Financial Bid.

**The offer will be liable to be rejected if any price is found inside any of the other two packets.**

- f) Security deposit @10% of the tendered value of the respective polytechnic is to be deposited by the successful vendor(s) in the form of Bank Guarantee to the Head of the concerned institute before issuance of work order. Directorate of Technical Education & Training, W.B will return the earnest money deposit (EMD) to the unsuccessful vendors. EMD of the successful vendor(s) will be released on production of document relating to submission of Security Deposit as stated above. Security deposit will be released after completion of warranty period of three years.
- g) Contract shall be awarded by the concerned head of the Institution and payment shall be made from his end as per rule.

- h) Cost should include three years on-site warranty to hardware, software and application packages including spare-parts, replacement of faulty/damaged components and technical services and delivery charges to the respective location.
- i) The offer will be rejected outright, if valid qualifying documents are not enclosed along with technical offer.
- j) Sealed tenders to be dropped in the `Tender-Box' kept in the office of the Director for this purpose.
- k) **Important Dates & times**
  - a. **Last date of Issue of tender document** - 15.07.2011 up to 3 PM
  - b. **Last date of submission of Prebid Query** - 18.07.2011 up to 2 PM
  - c. **Date of reply of Prebid Query** - 22.07.2011 at 4 PM
  - d. **Last date of submission of filled up sealed tender document** - 29.07.2011 up to 12 Noon
  - e. **Opening of Tender Document** - 29.07.2011 at 12.15 PM
- l) Interested Vendors may be present at the time of opening of Tender.
- m) Quantities mentioned against the items are tentative, items may be purchased in part or staggered manner.
- n) **Authority has the right to reject part / whole of the tender without assigning any reason thereof.**

o)

1. All passive components should be of same make
2. All switches shall be of same make
3. The bidder should have **back-to back support** arrangement with the OEM for all the equipments, accessories, and spare parts etc. for a period of three years
4. **Bidder should submit detailed part coded bill of material along with technical bid**
5. There should not be multiple/optional quotes for an item. Only one and best product that meets the technical specifications for an item should be quoted
6. Incomplete and/or conditional bid or bid not confirming to the terms and conditions would be rejected.
7. A bid submitted with false information will not only be rejected but the vendor may also be debarred from participation in future tendering process.
8. Materials such as pipe, bricks, sand, stone-chips, cement, paint etc. required for laying the cables and other fixation work will have to be supplied by vendor.
9. **Bidder should quote unit rate of all the products and services comprising minimum requirement as well as the additional components.**
10. Past Performance of the Vendors will be judged at the time of Technical Evaluation.

**p) Pre-Qualification Criteria**

1. The bidder should be a commercial concern with their existence in India for a period of at least continuous last three previous financial years. Copy of the following documents must be submitted in support of above:

- a) Audited Balance Sheet (by Chartered Accountant) of last three financial years.
- b) VAT/CST Registration certificate allotted by Sales Tax authorities.
- c) Income Tax PAN Card.
- d) Service tax Registration Number.
- e) Certificate of Incorporation from the Registrar of Companies (ROC) in case of a company.  
Registered partnership deed in case of partnership firm.

2. For Part A,

-the Bidder must have previous experience in architecting Local Area Network and must have successfully Designed, Supplied, Installed and Operationalised Network Active, corresponding Passive Components , server, desktop and implemented backbone and structured cabling during last 3 years in India.

Copy of purchase order in support of this must be submitted in support of this. For which the following conditions should be satisfied –

At least one order of value **not less** than Rs 75, 00,000.00

Or

At least two order of value **not less** than Rs 40, 00,000.00

Or

At least three order of value **not less** than Rs 30, 00,000.00

All the Purchase Order/Work Order required for qualification parameters needs to be necessarily executed in **INDIA** only.

**3. Vendor should be an OEM / authorized dealers/distributors of the OEM, whose products are being quoted. The authorization letter issued by the OEM should be enclosed specifically against this tender.**

### **Clarification and addenda in respect of pre-bid query :**

- 1. All columns to be filled up by the prospective vendor. In case of any column remaining unfilled, the tender is liable to be rejected as incomplete bid.**
- 2. Specifications of UPS (2.0 kVA and 600VA) may be seen**
- 3. Revised specifications of Photocopier may be seen**
- 4. Revised information on EMD may be seen at sheet no. 3**
- 5. Quoted price shall be equally applicable for all Polytechnics.**
- 6. Replacement / penalty clause shall be imposed on the supplier, in case of repeated hardware failure for a continuous duration up to 48 hours at any point of time, within the warranty period.**
- 7. Validity of offer shall be up to 31.03.2012.**
- 8. Mode of payment : 100% after satisfactory installation and commissioning.**
- 9. Specification of Antivirus ( Table -A-10)should be treated for both Server & Client**

## Description of Items for each Polytechnic

- All products should be of reputed make/brand ( name to be mentioned against each serial umber).
- Unit Price, Taxes & Total Price (in Rs.) against each Item duly signed and sealed by the competent

SR No	DESCRIPTION	QUANTITY	Unit Price (Rs.)	VAT/ TAX (%)	Total Price (Rs.)
1	Server	1			
2	2 KVA Online UPS with 30 Mins Backup	1			
3	Access Switch	1			
4	Wall mount network rack	1			
5	Cat 6 Cable (Box of 305 Mtrs)	4			
6	24 Port Cat6 Patch Panel	2			
7	Cat6 single port I/O with back box	20			
8	Cat6 patch cord 2 Mtrs (Factory Crimped)	20			
9	Cat6 patch cord 1 Mtrs (Factory Crimped)	20			
10	LAN Installation (Item 3-9) , Configuration – Implementation of the Network & Training Personnel	LS			
11	Windows server standard MOLP AE (with media)	1			
12	Win Server device CAL MOLP AE- 20 users (with media)	1			
13	MS Office Standard 2010 MOLP AE -20 users (with media)	1			
14	A3 Network Printer	1			
15	Desktop Computer	20			
16	600 VA UPS	20			
16a	Projector	1			
17	A4 printer	5			
18	Antivirus software - 20 users (with media)	1			
19	Cat 6 Cable (including laying for every additional 100 m)				
20	Core Switch	1			
21	Server Rack	1			
22	Optical fibre Module				
23	Optical Fibre cable (in mtrs)				
24	12 Port LIU with pigtail	1			
25	Fibre patch cord	1			
26	FO cable laying in trenches with HDPE conduit , Ground digging with refilling on soft soil (3ftdeep), FO cable laying along the wall with HDPE conduit, Fiber buffering, tubing and splicing with tensile check (Each Core), Fiber Panel fixing and dressing (Each) ( <b>per metre</b> )				
27	Photocopier with zoom facility	1			
28	Library Information System Software	1			

authority to be furnished as per above format only ( separate sheets may be attached as annexure)

**SI no-2 2 kVA Online UPS with 30 Mins Backup**

Items	Specification	Compliance (Complied/Not Complied)	Remarks
<b>CAPACITY</b>	2 kVA with 30 minutes Backup		
<b>MODEL / MAKE</b>	Bidder to Specify		
<b>TECHNOLOGY</b>	DSP Design/ Microprocessor/ PWM With IGBT		
<b>INPUT</b>			
INPUT VOLTAGE	160 VAC - 276 VAC 1 Phase 230 V AC + Neutral + Earth		
Input Frequency Range	45 - 55 Hz		
Power Factor	0.99 to Unity		
THDi	<8%		
<b>Output Voltage</b>	220 / 230 / 240 V AC Single phase +/- 1%		
Frequency	50 Hz, +/- 0.1%		
Load Power Factor range	0.7 Lag		
Total Harmonic Distortion	Less than <= 2% (Liner Load) / <=3% (Non Liner Load)		
Crest Factor	3:1		
Efficiency (AC-AC)	>90%		
Inverter Overload Capacity	105-110% 10 Min, / 111-130% 1 Min / 131-150% 10 Sec		
<b>ISOLATION</b>	<b>Galvanic Isolation Should be provided</b>		
Manual Bypass Switch	Should be provided		
<b>INDICATORS</b>			
Battery Level	Should be Provided		
Static Bypass On	Should be Provided		
Load Level	Should be Provided		
Mains on	Should be Provided		
Inverter On /Off/Faulty	Should be Provided		
<b>Static Switch</b>	Automatic Bi-directional should take care of 100% uninterrupted transfer		
Transfer time (L-B)	0 ms		
Overall efficiency	90%		
Inverter efficiency	> 85%		
<b>METERING</b>			

DC Voltage	Should be Provided		
DC Current	Should be Provided		
Charge / discharge	Should be Provided		
Output voltage	Should be Provided		
Input Voltage	Should be Provided		
<b>Battery</b>	Sealed Maintenance Free Lead Acid		
Each Battery Voltage	12V each.		
Period of Backup	30 min. on 100% load on each UPS		
Batteries Make	Exide, Amara Raja, Rocket or other		
DC Bus Ripple	< 1% (With battery connected)		
Battery recharge time from fully discharge condition to 100% charged condition.	< 12 Hrs.		
Total DC Bus Voltage nominal	>= 96 VDC		
No. of Battery Banks	Single for each UPS		
No. of Battery and AH Rating of each Battery	Bidder to specify		
VAH Rating For 2 KVA	<b>Minimum 2688 VAH</b>		
Battery Housing	MS Cabinet / MS Battery Rack		
<b>Audible Alarm for following conditions</b>			
Battery Low	Should be Provided		
Mains Failure	Should be Provided		
Overload	Should be Provided		
<b>Environmental</b>			
Operating Temperature	0-45 deg. C		
Humidity	95% RH non-condensing.		
Noise Level	<= 60 dB at from 1 m distance		
<b>RS 232 Port for Software Interface</b>	Should be provided		
<b>Company should have ISO 9001 and ISO 14001 Certification</b>	Mandatory		
<b>Onsite Warranty</b>	Three years on UPS and Battery		

**SI no-16    600 VA UPS**

<b>SPECIFICATIONS OF UPS</b>		<b>Compliance (Complied/Not Complied)</b>	<b>Remark</b>
<b>INPUT</b>			
VA/W	600/360		
Voltage	230V		
Voltage range	140-300V AC		
Frequency	50 Hz +/- 10% ( Auto sensing )		
<b>Output</b>			
Voltage Mains	190-253Vac		
Voltage regulation ( Batt mode)	230+/-10% RMS		
Frequency	50Hz		
Frequency Regulation ( Battery Mode)	50Hz+/-1Hz		
Output Waveform	Stepped Sine-Wave		
<b>Battery</b>			
Battery Type and Number	12V 7AH x 1		
Backup Time (at a PC load with 17inch Monitor)	10 - 15 Minutes for one PC		
Recharge Time	4 - 8 hours to 90% after complete discharge		
<b>Transfer Time</b>			
Typical	4 - 8 ms		
<b>Indicator</b>			
AC Mode	Preferably Green lighting		
Backup Mode	Preferably Green flashing		
<b>Audible Alarm</b>			
Backup Mode	Sounding every 10Sec		
Low Battery	Sounding every Sec		
Overload	sounding every 0.5Sec		
Fault	Continuous sounding		
<b>Protection</b>			
Full Protection	Discharge , Overcharge & overload		
Environment	0 - 40 ° C 0 - 90% relative humidity ( Non - condensing )		
Noise Level	Less than 40 db		
<b>Certification</b>	Company should have ISO 9001 and ISO 14001 Certification		
<b>Onsite Warranty</b>	Three years on UPS and Battery		

## **Sl no-27 Specification of Photocopier (revised )**

1	Make / Brand with Model No.	
2	Detailed Specifications	
	<b>Item (suggestive)</b>	<b>Offer</b>
2.1	Minimum copying speed (cpm) :	18-20
2.2	Paper Size(original/image) : A4/A3	
2.3	Resolution ( min. 300 dpi )	
2.4	Memory : minimum(MB) 128	
2.5	Bypass tray : 80 sheets	
2.6	Zoom: 50 to 200%	
2.7	Continuous copying capacity	
2.8	Cost per copy ( running cost excluding cost of power, paper and personnel )	
2.9	Category : Simplex	
2.10	Cost of Toner	
2.11	No. of pages per Toner	
2.12	Cost of Drum	
2.13	Life of Drum	
2.14	Cost of Developer	
2.15	Life of Developer	
2.16	Life of machine (no. of copies _	
2.17	Warranty: 3(three) years	
2.18	Unit Price(Rs.)	
2.19	VAT	
2.20	Total Price(Rs.)/unit	
	<b>Total Price (Rs.)</b>	

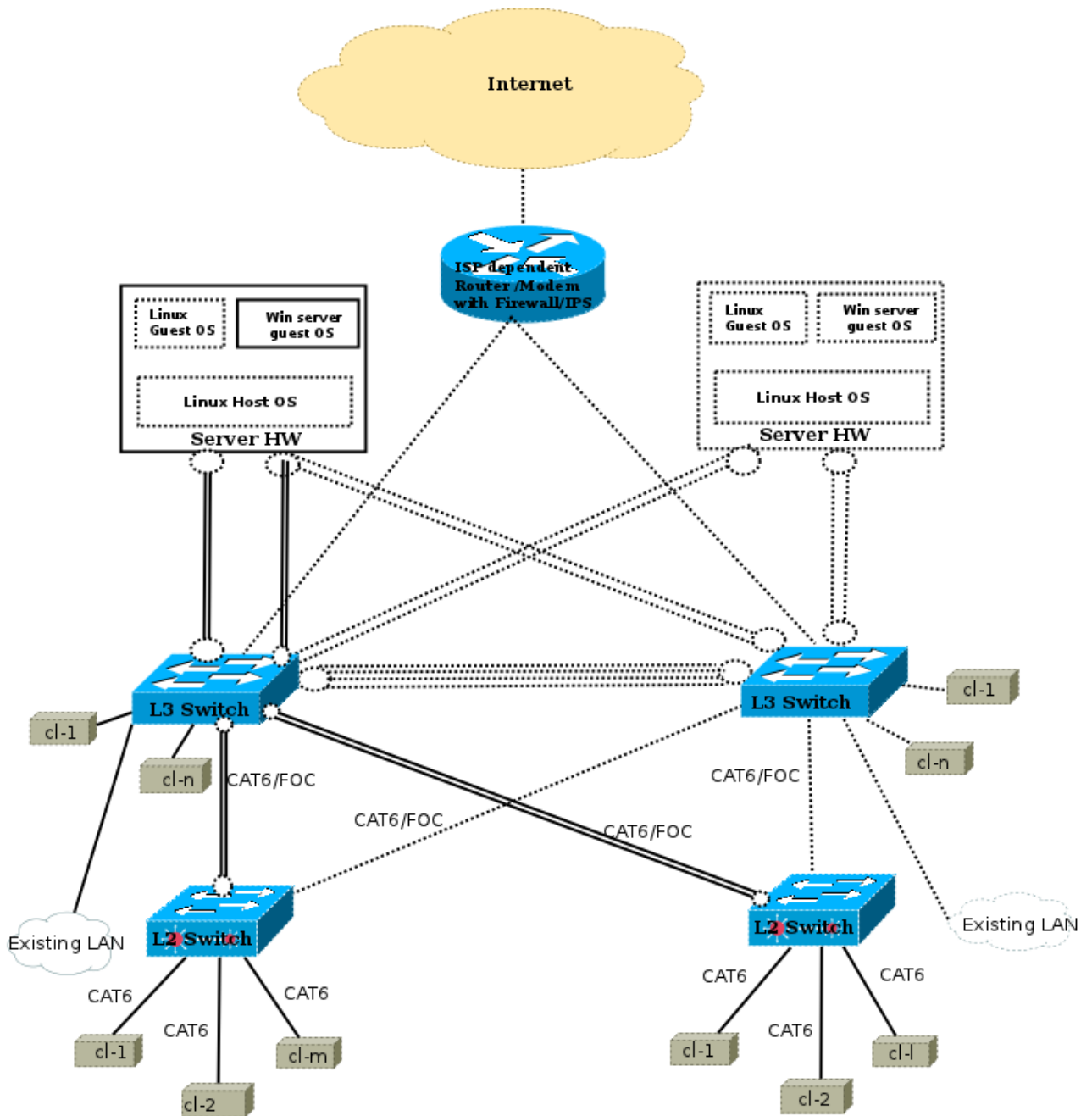
## **Sl. No : 28 Specification of Integrated Library Management Software**

- An Integrated Library management Software to cover all functions of a library supporting LAN for minimum 4 users (increasable when required) to handle unlimited records.
- There must be Acquisition, Cataloguing, Circulation, Serial control & System administration components:
- Capable to provide access to on-line database through internet including web enabled search facilities by up-gradation.

- Field-proven, well tested (minimum for last 10 years) being used in at least 50 sites including Universities, Colleges, Engineering colleges, Polytechnics, NITs, IITs, IIMs, various CSIR research institutes & corporate houses in W.B.
- Must facilitate standard exchange format such as MARC as well as non -MARK format to describe adequately each material type using different fields with variable field lengths,
- Supports a wide spectrum of hardware/ software platforms (to run on different O.S.) in Client-Server environment.
- Support multimedia files (images, videos, music etc.)
- In-built Bar Code generating facility.
- Must be Bar code technology compatible in circulation for identification of both materials and borrower with bar code scanner.
- Security through password for the user as well as for the library staff.
- Access should be controlled both at the system level and function levels.
- Established local Support & Training division must be in Kolkata.
- In Serial section there must be: Subscription, Renewal, Invoicing, Payment, Issue Management, Record keeping, House keeping, Union catalogue, Binding & Claim Monitoring.

Must be capable of:

- Documents details management for books, Conference Proceedings, periodicals, bound journals, multimedia doc, etc.
  - Vendor data base, currency, exchange rate, order cancellation & request, payment update & voucher
  - Accession Register, Gift & Endowment section
  - All maintenance related section like title process, update holding, update & remove, change Accn. No., merge titles etc.
  - Authority files for all categories, Current Awareness Service, Stock Verification.
  - Generation of different types of Report & Queries, Catalogue cards as per AACR-2.
  - Global Change in all fields
  - Member category, group, parameter and fine selection (user defined)
  - Modify, Cancellation, Renewal, & Remove member data. Temporary Member Section
  - Management of damaged, written off & missing copies.
  - Reservation Management, Renewal service & Transaction log.
- **Rate should include cost of training of personnel**
  - **Free support service to be provided for 3 (three) years**
  - **Warranty : 3 (three) years**



**Draft - Logical Polytechnic College Campus Network-Centralized Server Infrastructure Diagram ( NIC ,WBCS )**

**Note :**

1. For connecting maching/device having possibility of electrical interference,(S)STP-CAT6 cable may be used
2. Diagram is logical and dotted lines/blocks represent future / full blown configuration
3. When 2 nos L3 switches are in place, one link of the aggregated link of L2 will be connected to the other L3.

## APPENDIX-A

## SPECIFICATION :

## A1. Desktop Computer ( minimal guiding specification ) :

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	OS & utilities.	(1) Windows 7 Professional (64 bit) -Preloaded with DVD media, & license. [ on requirement from the Department]  (2) EAL-4 certified  (3) Microsoft Security Essential – preloaded with engine and virus DB signature.				
2	Processor	Make & Model, 1 Physical <b>P</b> rocessors, Nos. of <b>C</b> ores (if any) / Processor, Nos. of <b>T</b> hreads (if any) / Core i.e. in total <b>P</b> / <b>C</b> / <b>T</b> for the system				
2.1		64 Bit architecture for all cores (if any) supporting x86 architecture				

2.2		Proc Feeq. (in Ghz), cache L1 ( in KB), L2 (in KB), L3 (if any – in MB)				
2.3		Max. Processor-I/O transport : Byte / transfer , Transfer / Sec, Processor- Memory Bandwidth				
2.4	Average SPEC- CPU2006 Rates for the quoted system.	SPECPU2006 (1.1) Rates :  (SPECint_rate2006 + SPECfp_rate2006)/2 >=50,				
3	Quoted memory and max. memory possible on quoted system, after full expansion.	(a) 4GiB (2x2 GiB), DDR3, 1066 Mhz  (b) Max. Expansion to 8GiB				
4	VGA & Others	(1) Display Capability : (a) OpenGL >= 3.x, (b) DirectX >= 10.x, (c) Shader Model >= 4.x,  (2) 1 KBD Port Type, 1 Mouse Port Type, 4 nos. of USB-2 or higher, 1 Parallel Port , DVI- I/D and D-sub Port , line-in, line-out, mike-in				
5	Hard Disks drives	Min. 500 GB SATA- 2 HDD with 7200 rpm				
6	Optical Drive	DVD-DL RW				
7	Ethernet	Integrated 10/100 Mbps, Ethernet on RJ-45				

8	Free slot for adapters	(1) one PCI-Express x16, (2) PCI-Express ( mention type )				
9	Monitor	(1) Resolution >= 1600x900, (2) Aspect Ratio = 16:9 (3) Response Time <= 5ms, (4) D-sub, DVI-I/D, (5) LED-LCD, (6) TCO'03 certified.				
10	Mouse & KBD	(1) USB 2 button Optical scroll Mouse with pad, (2) PS-2/USB standard KBD				
11	Power supply	SMPS of suitable watt for the above configuration (full blown)				
12	Cabinet	Preferably slim				
13	RoHS	Mention compliance and level of compliance				
14	Warranty	3 years, on-site, comprehensive (firmware, utility, component) after User Acceptance Certificate.				
15	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 14, indicating make and model no.				

**A2. Server Computer ( minimal guiding specification ) :**

<b>Sl.No</b>	<b>Component / Performance / Utility</b>	<b>Min. Specification (asked for – by the Dept.)</b>	<b>Specification Mapping to minimal Technology or Items – by the Bidder</b>	<b>Reference (Section /Pg/Para No. of Bid – by the Bidder)</b>	<b>Examine Config ( Higher or Equal / Lower) by the Dept.</b>	<b>Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )</b>
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	OS & Utilities	(1) Windows Server 2008 R2 Standard ( 64 bit ) MOLP AE with DVD media and certification. 20 nos of Win Server Device CAL MOLP AE (on requirement of the Department )  (2) EAL-4 certified  (3) Microsoft Security Essential – preloaded with engine and virus DB signature.				
2	Processor	Make & Model, 2 Physical <u>P</u> rocessors, Nos. of <u>C</u> ores / Processor, Nos. of <u>T</u> hreads / Core i.e. in total <u>P</u> / <u>C</u> / <u>T</u>				
2.1		64 Bit architecture for all cores (if any) and all processors, supporting x86 architecture				
2.2		Proc Feeq. (in GHz),  Proc. Freq. Boost (if any - in MHz)				

2.3		L1 cache (I , D), L2 cache (I, D / Comb.), L3 cache (I, D / Comb.) all in MiB				
2.4		Max. Processor-Memory transport : Byte / transfer , Transfer / Sec, Bandwidth				
2.5	Virtualisation support	Mention (1) CPU flags, (2) architecture for hardware supported full virtualisation.				
2.6	Average SPEC-CPU2006 Rates for the quoted system.	SPEC CPU2006 (1.1) Rates : ( SPECint_rate2006 +SPECfp_rate2006)/ 2 >=200				
3	Quoted memory and max. memory possible on quoted system, after full expansion.	(a) 24GiB (6 x 4GiB) DDR3, 1066 Mhz with ECC or equivalent (b) Max. Expansion to 48 GiB				
4	VGA & Others	(1) Separate VGA Mem >= 8MB & VGA Mem Type, 1 KBD Port Type, 1 Mouse Port Type, 2 nos. of USB-2 Port  (2) Interfaces for VGA, KBD and Mouse should be compatible with the KVM switch.				
5	RAID	Controller configured for dual-ported SAS drives, with 512 MB battery backup / flash cache,				

		supporting RAID-0,1,5,10 etc. supporting hot-swap & hot-spare drives				
6	Hot-swap , small form factor SAS drives	Min. 5 nos, 10K rpm, dual ported SAS, SFF, min. 6 Gbps max transfer rate each, min 300 GB raw capacity each, to be configured with RAID-1 and RAID-5				
7	SAS Casing	Min 5 , SFF, host-swap, dual ported casing				
8	Optical Drive	DVD-DL RW				
10	Ethernet	Min. 4 nos of 10/100/1000 Mbps, Ethernet on RJ-45				
11	Free slot for adapters	Min. 2 nos. (preferably PCI-Express) – Mention type and parameter				
12	Server Environment Management	(1) IPMI-2.0 or equivalent  (2) Interfaces / utilities for power, temperature, predictive component failure status etc in SNMPv3 / RMON / Equiv. compatible with ICT Monitoring				
13	Power Supply ( per server / per enclosure ) & cooling fans	(1) Min. 2 nos. of hot-swap power-supply, Watt of each > fully configured and all components working requirements  (2) cooling fans				

15	Form factor	Form factor : Rack mountable				
16	Other component / utility /software	Specify & quote , as necessary to achieve solution				
17	RoHS	Mention compliance and level of compliance				
18	Warranty	3 years, on-site, comprehensive (firmware, utility, component) after User Acceptance Certificate.				
19	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 18, indicating make, and model no.				

**A3. Ethernet Layer-2 Access Switch ( minimal guiding specification ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section/ Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Generic	(a)Rack mountable, Layer-2,(b) 22 x 10/100 Mbps on RJ-45 and 2 x 1Gbps RJ-45 and GBIC combo ports, (c)Min 2 K MAC Address support , (d) VLAN				
2	Switching capacity	(a)Non-blocking, full duplex on all ports with all				

		quoted features and functionality. (b)Switching Fabric capacity $\geq$ 8.4 Gbps				
3	IP Std.	Ipv4 and IPv6 capable				
4	Brief list of Protocols	IEEE (a) 802.1s, (b) 802.1w (c)802.1X, (d)802.1v, (e)802.1p, (f)802.3ad, (g)802.1D, (h)802.1Q, (i)802.3ab, (j)802.3z, (j)802.3u etc.				
5	Security features	(a)port security,(b) DHCP filtering,(c) ARP spoofing prevention, etc				
6	Other Features	The Layer-2 devices support 802.1Q/p based QoS at Layer-2				
7	Management	(a)RMON-I,II, (b)SNMPv2,SNMP v3, (c)Telnet server & client, (d)Web Interface etc.				
8	RoHS	Compliance and level of compliance				
9	Warranty	3 years, on-site, comprehensive (firmware, utility, component) after User Acceptance Certificate.				
10	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 9, indicating make, and model no.				

**A4. Wall mount 9U network rack ( minimal guiding specification ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section/ Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher or <u>E</u> qual / <u>L</u> ower) by the Dept.	Judgement on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Generic	9 U industry standard rack with accessories				
2	Door	Front door (glass fitted), with lock and key arrangement etc.				
3	Patch panel & Wire Manages	CAT6 Patch panel- 1 no., min 1 no of wire-manager,				

**A5. CAT6 Cable (Box of 305 Mtrs) ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher or <u>E</u> qual / <u>L</u> ower) by the Dept.	Judgement on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	General	(a)Category 6 Unshielded Twisted				

		<p>Pair 4 pair 100Ω cable</p> <p>(b)compliant with ANSI/TIA/EIA-568-B.2-1</p> <p>(c) Mention Transmission Performance Specifications for 4-pair 100Ω</p> <p>(d) Category 6 UTP cables shall extend between the work area</p> <p>(e)4 pair, 23 AWG, UTP Non Plenum cable jacket.</p> <p>(f) TIA/EIA 568-B.2 shall be UL® Listed</p>				
2	Mechanical	<p>(a)4 twisted pairs separated by internal X shaped,4 channel, polymer spine / full separator. Half shall not be accepted.</p> <p>(b)Conductor Solid Copper</p> <p>(c) Conductor Diameter 0.56±0.005mm (23 AWG)</p> <p>(d)Insulator Polyolefin</p> <p>(e) Jacket PVC</p> <p>(f) Outer Diameter 6.0±0.4mm</p>				
3	Standards	<p>(a)IEEE 802.3ab</p> <p>(b)ETL verified,</p> <p>(c)Attenuation,</p> <p>(d) pair-to -pair and PS NEXT,ELFEXT and PSELFEXT, Return Loss ACR and PS ACR need to be provided along with bid</p>				

4	ROHS	Mention level of compliance				
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**A6. 24 Port CAT6 Patch Panel ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher or <u>E</u> qual / <u>L</u> ower) by the Dept.	Judgement on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	General	(a)Category 6, 24 port Unshielded Twisted Pair  (b)compliant with ANSI/TIA/EIA-568-B.2  (c)Icons on each of 24-ports  (d)9mm or 12mm Labels on each of 24-ports (to be included in supply)  (e)Modular Jack  (f)750 mating cycles  (g)Wire terminal (110 block)				
2	Mechanical	(a)Polyphenylene oxide, 94V-0 rated  (b)Polycarbonate, 94V-0 rated  (c)Jack contacts Phosphorous bronze, plated with				

		1.27micro-meter thick gold  (d)Fully powder coated pencil grey Panel				
3	Standards	(a)UL listed Termination Pattern  (b)TIA / EIA 568 A and B (c)Attenuation, NEXT, PS NEXT, FEXT and Return Loss , Performance Characteristics to be provided along with bid				
4	ROHS	Mention level of compliance				

**A7. Cat6 single port I/O with back box ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher or <u>E</u> qual / <u>L</u> ower) by the Dept.	Judgement on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Characteristic Features	(a)Single Gang square plate, 86mmx86mm  (b)Write on labels in transparent plastic window – supplied with plate,1 port white face plate with back box				

2	plate	(a)Screw hole covers – to be supplied with plate  (b) Plug in Icons – Icon tree – to be supplied with plate  (c)Should be able to support variety of jacks – UTP, STP, Fiber, Coax etc.				
3	Material	ABS/UL 94 v-0				
4	Standard	Conforms to CAT6 Work Area Data I/O Outlet (RJ45) adhering to EIA/TIA-568-B2.1, ISO/IEC 11801(2002) and CENELEC EN50173-1 (2002) specifications				
5	ROHS	Mention level of compliance				

**A8. Specification of UTP Jacks ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Features	(a)Unshielded Twisted Pair, Category 6, conform to ANSI/TIA/EIA-568-C.2 CENELEC EN 50173 and ISO/IEC-11801 (2nd Edition) requirements.  (b)Modular Jack  (c)750 mating cycles  (d)Wire terminal  (e)200 termination cycles .				
2	Accessories	Strain relief and bend-limiting boot for cable, Integrated hinged dust cover,				
3	Material	(a)Poly-phenylene oxide, 94V-0 rated  (b)Wiring blocks  (c)Polycarbonate, 94V-0 rated  (d)Jack contacts  (e)Phosphorous bronze, plated with 1.27micro-meter				

		thick gold				
4	Standard	(a)UL listed  (b)Performance Characteristics to be provided with bid  (c)Attenuation, NEXT, PS NEXT, FEXT and Return Loss				
5	ROHS	Mention level of compliance				

**A9. Cat6 patch cord 2Mtrs & 1 Mtr (Factory Crimped) ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Category 6 Equipment cords	(a)The work area equipment cords shall, at a minimum comply  (b)with proposed ANSI/TIA/EIA-568-B.2-1 Commercial  (c)Building Cabling Standards Transmission Performance  (d)Specifications for 4 pair 100Ω Category 6 Cabling.				
2	Category 6 modular equipment	Shall be round, and				

	<p> cords</p>	<p>consist of eight insulated 24 AWG, stranded copper</p> <p>conductors, arranged in four color-coded twisted-pairs</p> <p>flame-retardant jacket. Equipped with modular 8-position modular plugs on both</p> <p>ends, wired straight through with standards compliant wiring.</p> <ul style="list-style-type: none"> <li>- Should have 50 micro inches of gold plating over nickel contacts.</li> <li>- Modular cords should include a molded strain relief boot.</li> <li>- Should be covered by ETL verification program for</li> </ul> <p>compliance with TIA 568B.2-1. Certificate to be submitted</p> <p>with bid.</p>				
<p>3</p>	<p>Mechanical</p>	<p>(a) Conductor size: 24 AWG stranded bare copper Cable</p> <p>(b) Jacket: PVC</p> <p>(c) Temperature range: -20oC to +60oC</p> <p>(d) Minimum 750 insertion cycles</p> <p>(f) Contact material: Copper alloy</p> <p>(g) Contact plating: 50μ” Gold/100μ”Nickel</p>				

		<p>Plug dimensions &amp; tolerances compliant with FCC Part 68 and IEC 60603-7</p> <p>(h) Approvals: UL, CSA</p>				
4	ROHS	Mention level of compliance				

**A10. Anti-virus Server Software on CD/DVD media with client lic. ( minimal guiding specification ) :**

Sl. No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Threat Detection	(a)Virus (b)Worm (c)Trojan (d)Spyware (e) Rootkit (f) Other malware				
2	Additional Protection	(a)OS Exploits (b)Key loggers (c)Inbound Email (d)Outbound Email (e)Instant Messaging (f)P2P/File Sharing (g)Registry (h) Dialers (i)Backdoor (j)Hackers (k) Phishing (l)Identity Theft (m) Adware, ActiveX (n)Cookies Scripts (o)Auto USB Detect (p)Other Vulnerabilities (mention)				

3	Protection Technology	(a)Virus Signatures (b)Blacklisting (c)Whitelisting (d)Real-Time scanning (e)Real-time Network scanning				
4	Scanning Capability	(a)On-access Scanning (b)On-demand Scanning (c) Manual Scanning (d)Scan Individual File(s) (e)Auto-Clean, quarantine of Infected Files (f) Scan USB (and other external drives)				
5	Additional Features	(a)Self-Defense Scheduling (b)History/Report Logging				
6	Updates	(a)Automatic engine and virus signature update, (b)Manual engine and virus signature update (c)Scheduled update (d)Rollback,				
7	Certifications	(a)West coast Lab Anti-virus,(b)WCL Anti spyware,(c) WCL Anti Trojan, (d) WCL Anti Malware, ICSA certificate				
8.	Client Lic.	20 nos				
9.	Licence	All licence for 3 years durations, inclusive of all client lic.				
10.	Developer / Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 9, indicating version, revision and lic.				

**A11. A3 Network Printer ( minimal guiding specification ) :**

<b>Sl. No</b>	<b>Component / Performance / Utility</b>	<b>Min. Specification (asked for – by the Dept.)</b>	<b>Specification Mapping to minimal Technology or Items – by the Bidder</b>	<b>Reference (Section /Pg/Para No. of Bid – by the Bidder)</b>	<b>Examine Config ( Higher or Equal / Lower) by the Dept.</b>	<b>Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )</b>
(a)	(b)	(c)	(d)	(e)	(f)	(g)
0	Technology	Laser, gray-scale				
1	Duty Cycle in Pages	50000				
2	Duplex	Auto duplex				
3	Memory	64 MiB				
4	Input Trays	2				
5	Input Tray Capacity	500 sheets				
6	Output Capacity	100 sheets				
7	Connectivities	(1) USB 2.0, (2) 10/100 Mbps Ethernet				
8	Resolution	1200x1200 dpi				
9	Media Size Supported	A3, A4, A4 rotated, A5, B4 (JIS), B5, etc.				
10	Custom Media Size	3x5 inches to 8.5x13 inches				
11	Operating System compatibility and drivers	Windows XP, 2000, Vista, Windows 7, Windows Server 2003, 2008 and Linux				
12	ROHS	Mention level of compliance				
13	Warranty	3 years, on-site, comprehensive (firmware, utility, component, drivers)				

14	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 13, indicating make and model no.				
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**A12. A4 printer ( minimal guiding specification ) :**

<b>Sl. No</b>	<b>Component / Performance / Utility</b>	<b>Min. Specification (asked for – by the Dept.)</b>	<b>Specification Mapping to minimal Technology or Items – by the Bidder</b>	<b>Reference (Section /Pg/Para No. of Bid – by the Bidder)</b>	<b>Examine Config ( Higher or Equal / Lower) by the Dept.</b>	<b>Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )</b>
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Print Technology	Laser, Gray-scale.				
2	Memory	2MiB				
3	Minimum Print Resolution	Min. 600 dpi X 600dpi				
4	Duty cycle (monthly, A4)	5000 pages				
5	Media handling Paper input	Min 150 sheets Adjustable Tray + Manual Tray.				
6	Paper output	100 sheets				
7	Paper size	A4, A5 ,Legal, Envelope, postcard, etc				
8	Interface and connectivity	High Speed USB 2.0 or higher				
9	Duplex printing	Manual				
10	Operating System Compatibility and Driver/Software	Windows 2000/XP/Vista/ Windows 7, Linux				
11	ROHS	Mention level of compliance				
12	Warranty	3 years, on-site, comprehensive				

		(firmware, utility, component, drivers)				
13	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 12, indicating make and model no.				

**A13. Ethernet Layer-3 Switch ( minimal guiding specification ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section/ Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Generic	(a)Rack mountable, Layer-3 (b) 20 x 10/100/1000 Mbps on RJ-45 and 4 x 1Gbps on RJ-45 and GBIC combo ports, (c)Min 6 K MAC Address support				
2	Switching and packet handling capacity	(a)Non-blocking, full duplex on all ports with all quoted features and functionality. (b)Switching Fabric capacity $\geq 48$ Gbps (c) Packet (64 byte / packet) handling capacity $\geq 40$				

		mpps (d) Stackable				
3	IP Std.	IPv4 and IPv6				
4	Routing Protocols	On all ports – Static on IPv4 and IPv6, with min 100 static routes.				
5	Brief list of Protocols	IEEE 802.1p,802.1Q,802.1w,802.1s,802.1D,802.1X,802.3u,802.3ab,802.3z,802.3x,802.3ad etc.				
5	Security features	(a)port security, (b)DHCP filtering, (c)ARP spoofing prevention etc				
6	Other Features	(a)Support for IEEE 802.1p QoS policies  (b)Shall have priority queuing  (c)Congestion Avoidance feature should be available.  (d)QoS and ACL support				
7	Management	(a)RMON (b)SNMPv2,SNMP v3, (c)Telnet server & client, (d)Web Interface etc.				
8	RoHS	Compliance and level of compliance				
9	Warranty	3 years, on-site, comprehensive (firmware, utility, component) after User Acceptance Certificate.				
10	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 9, indicating				

		make, and model no.				
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**A14. Server Rack ( minimal guiding specification ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Generic	36U, high depth (min. 1000 mm) industry standard server rack with accessories, compatible with the rack-server, and L3 switch.				
2	Power sockets	Dual power inlets, with sufficient nos. of compatible sockets to power servers, switches, etc.				
3	Patch panel & Wire Manages	(a) CAT6 Patch panel – 1 no, (b) Fiber Patch panel – 1 no, (c) Wire-manager – 2 nos.				
6	Door & Fans	Perforated front door, with lock and				

		key arrangement, sufficient nos of fans etc.				
7	IP KVM Switch	Rack mountable 8 port IP KVM Switch with all cables , accessories, and SW				
8.	Trays	Total nos of free trays = 2				
9.	Monitor	17", foldable, rack mountable monitor, with KBD and mouse				

**A15. Projector ( minimal guiding specification ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Reference (Section/ Pg/Para No. of Bid – by the Bidder)	Examine Config ( Higher or Equal / Lower) by the Dept.	Judgement on Acceptance ( Yes / No ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	General	(a)Aspect ratio 16:10/16:9, (b)Resolution 1280x800 pixel, (c)Manual Zoom / Focus, (d)Throw ratio 1.5-1.8:1, (c)Contrast Ratio 500:1(d) should have built in speaker				
2	Lamp Life (Eco Mode / Normal	5000H / 3000H				

	Mode)					
3	Input Terminals	(a)VGA,(b) SVGA, (c)XGA,(d) WXGA, (e)RGB , (f)DVI-I (g)S-Video ,(h)Rj 45 Ethernet				
4	ROHS	Mention level of compliance				
5	Warranty	3 years onsite comprehensive with accessories and lamp				
6	Manufacturer's Authorisation Certificate	Submission of such, in compliance to clause 5, indicating make, and model no.				

**A16. Fiber Interface Modules for Layer-3 and Layer-2 switches ( as applicable in LAN ) :**

Sl.No	Component / Performance / Utility	Min. Specification (asked for – by the Dept.)	Specification Mapping to minimal Technology or Items – by the Bidder	Referen ce (Section/ Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher or <u>E</u> qual / <u>L</u> ower) by the Dept.	Judgement on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department ( Yes = Higher or Equal, No = lower / not quoted or mentioned. )
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Modules for Switches ( as required in the specific LAN)  Approx. Qty : 8 nos each for 2 institutes, 4 nos in one institute.	Multi-mode, 1000- Base, max. Distance <= 250 mtr, compatible with L3 and L2 switches ( as quoted)				
2	Fiber Patch Cord  Approx. Qty : 8	Compatible fiber patch cord, each <= 3 mtr, compatible				

	nos each for 2 institutes, 4 nos in one institute.	with the module 1 above , and fiber patch panel.				
3	Fiber patch panel  Approx. Qty : 3 nos each for 2 institutes, 2 nos one institute.	12 port compatible fiber patch panel / LIU with all accessories.				
4.	Multi-mode fiber ( approx. 100 mtr each for 3 institutes)	6-core, multimode, armoured, direct burial, compatible with 1,2,3 above.				
5.	Laying, Testing & Certification	(1)Laying – as applicable. (2) Test and Cerification for 20 years.				
4	ROHS	Mention level of compliance				

**A17. Capacity Building for Administration (server and network) ( minimal requirement ) :**

Sl. No	Administration	Min Requirement	Offering by the bidder	Reference (Section /Pg/Para No. of Bid – by the Bidder)	Examine Config ( <u>H</u> igher / <u>E</u> qual / <u>L</u> ower / <u>I</u> nconvenient) by the Dept.	Judgment on Acceptance ( <u>Y</u> es / <u>N</u> o ) by the department
1	Network Administrator	2 days, for a selected / designated official from each institution, with training kit ( mention content)				
2	System Administrator	3 days, for a selected / designated official from each institution, with training kit ( mention content)				

