



NATIONAL INSTITUTE OF TECHNOLOGY

G.E. ROAD, RAIPUR 492010, CHHATTISGARH, INDIA

Website: www.nitr.ac.in

NOTICE INVITING TENDER

National Institute of Technology, Raipur invites bids in two-bid format for “Supply and Installation of Furniture Items, Electric and Network Cabling, Accessories and Furnishings for CCC and TPO Buildings in Institute” including one year comprehensive warranty maintenance at the site.

Detailed information to the bidders including Instructions, Terms and Conditions, Schedule of Requirements, Specifications and Allied Technical Details, Price Schedule, Contract Form, and some other forms are available in the tender document which may be downloaded from the Institute Website <http://www.nitr.ac.in/tenders.html>

TIME SCHEDULE OF TENDER

S.No.	Schedule	Particulars
1.	Tender Enquiry Number	NITRR/Central Store/CCC & TPO/OT/2016/2124 Dt:23/11/2016
2.	Tender Processing Fee (Non-Refundable)	INR 10,000/- (Rs. Ten Thousand Only)
3.	Earnest Money Deposit	INR 10,00,000/- (Rs. Ten Lakhs Only)
4.	Date of hosting clarifications to the pre-bid queries sent by the bidders through e-mail to cccfur1@nitr.ac.in	12/12/2016
5.	Date and Time of Mandatory Site Visit	01/12/2016 at 03:00 PM
6.	Last Date and Time for Submission of the Tender	27/12/2016 by 03:00 PM
7.	Date and Time of opening of Techno-commercial bid	27/12/2016 at 03:30 PM

**Registrar
NIT Raipur**

CHAPTER 1: INSTRUCTIONS TO BIDDERS

1. NIT Raipur invites bids for the supply and installation of furniture items, electric and network cabling, accessories and furnishings on turnkey basis for the
 - i) **CENTRAL COMPUTER CENTRE (CCC) &**
 - ii) **TRAINING AND PLACEMENT OFFICE (TPO) BUILDINGS**

Furnishings and accessories for the building include electronic and electric items essential for smooth functioning.

2. This chapter Includes
 - a. **General Instructions**
 - b. **Eligibility Criteria of the Bidders (System Integrators)**
 - c. **Eligibility Criteria of the Primary Furniture Manufacturers**

3. This is an open tender under the two-part bid system. Sealed bids consisting of:

A) TECHNO-COMMERCIAL PART, and
B) FINANCIAL PART

are invited from technically experienced bidders for the same.

4. **TECHNO-COMMERCIAL PART:**

Techno-commercial part shall contain the technical specification sheets or datasheets of the manufacturer (for applicable products) to verify technical compliance or brief notes on individual product compliances specifically mentioning the deviations (if any)

- a. Bidders shall submit technical datasheets of the passive network components, accessories and related equipment including racks, rodent repellent system etc. with their techno-commercial bids along with line-by-line compliances of the same.
- b. The cable trays, electric cables and components supplied should meet ISI/BIS standards and the make must be approved by the CCC before delivery and installation.
- c. Passive network components including racks quoted must be supported by the manufacturer's datasheets / catalog and must include the table for line by line compliances with the Techno-commercial part.

This also applies for audio-visual systems, IP based surveillance system components, etc. whose technical details are also included in tabular form in Chapter 3: Specifications and Allied Technical Details.

- d. Bidders are required to quote only those products which meet the specifications and allied technical details mentioned in this tender document.
- e. Bidder shall submit the plan, elevation, and isometric drawings along with the dimensions of the **modular workstations** with the techno-commercial bid.
- f. Bidder has to submit proposed drawing or colored photographs (of good image resolution) of each furniture item quoted along with model numbers, if any.

Isometric drawings of the workstations with dimensions are to be mandatorily included.

Failure to provide such drawings or photographs along with the technical bid will result in rejection of the bid.

- g. Bidder has to submit a detailed cable tray layout showing the locations of electrical and data posts, if any, along with the Techno-commercial bids.
- h. Techno-commercial part must contain documents in support of eligibility criteria of the bidder and the primary furniture manufacturer, along with the original EMD document.
- i. **Tender Processing Fee:** Bidders have to deposit a non-refundable tender processing fee in the form of an account payee demand draft of Rs. 10,000/- in favor of the Director, NIT Raipur along with the techno-commercial bid.
- j. **IMPORTANT NOTE: TECHNO-COMMERCIAL PART SHALL NOT CONTAIN ANY PRICE RELATED INFORMATION, WHETHER EXPLICIT OR IMPLICIT**

5. FINANCIAL PART:

The Financial bid shall contain the signed and sealed price schedule submitted by the bidder.

- a. All-inclusive prices are to be mentioned in the price bid. The price will be firm and fixed throughout the period of the contract.
- b. The all-inclusive prices should include the costs of procurement, freight, transit insurance if any, labour charges for movement to the actual site of installation, and any other charges etc. and there shall be no escalation in the cost of labour or material.
- c. NIT Raipur shall not pay any idle wages for labour or machinery nor any interest on any payment due but not released for any reason, whatsoever.
- d. Government duties and tax percentages included in the price shall be mentioned separately.

- e. In case of the prices being affected by a hike in government duty or taxes, NIT Raipur shall make the payment for the increase, if any. All necessary documents in this regard shall be submitted by the bidder for approval by the competent financial authority of the Institute.
- f. In case of price reduction between the duration of bid opening to supply of the items, the benefit must be forwarded to NIT Raipur by the bidder.

6. MANDATORY SITE VISIT:

- a. The bidder has to mandatorily visit the site of work *i.e.*, **CCC** and **TPO** buildings and must study/inspect the drawings and design and to involve their authorized professionals for furniture, electrical and networking domains and carry out all necessary assessments before bidding for the tender.
- b. The site visit shall be convened on **01/12/2016** at **03:00PM** and the prospective bidders must attend at their own cost.
- c. Bids from bidders who fail to attend the site visit, shall not be considered.
- d. Bidders are advised to be observant during site visit and submit quote after close consideration and observation of all local conditions which may have a bearing on the cost. Excuses for ignorance of such situations / factors will not be entertained.
- e. No requests for modifying the quotes after submission of the bid by the bidder shall be entertained.

7. EVALUATION OF TENDER AND AWARD OF WORK:

- a. Evaluation of the tender shall be done purely on the basis of the tentative quantities for all the items mentioned in this tender document.
- b. Tenders shall be evaluated according to the terms of this tender and no new conditions shall be brought in at the time of evaluation.
- c. The work shall be awarded to the bidder who
 - i. successfully meets the eligibility criteria (including bidder's eligibility criteria as well as primary furniture manufacturer's eligibility criteria), and
 - ii. submits a bid complete in all respects and contains products which are technically compliant with the specifications and allied technical details mentioned in this tender, submits suitable furniture designs based on the specifications as mentioned in this tender document, and
 - iii. whose bid is the lowest in terms of all inclusive prices of all the items and services F.O.R. NIT Raipur (the grand total as mentioned in price schedule-*refer* Chapter: 4) .

- iv. The post-warranty AMC charges shall not be included for evaluation of lowest quotes. NIT Raipur reserves the right to go for or not to go for AMC at the end of the warranty period.

8. PRE-BID CLARIFICATIONS:

- a. Any clarification in connection with this tender or a pre-bid query may be addressed to cccfur1@nitrr.ac.in. The pre-bid query must contain the Name, Postal Address and E-mail Address of the bidding firm.
- b. The pre-bid queries will be only entertained by those bidders who visit the site on the mentioned date and time and the queries should be sent within 7 working days from the date of site visit.

9. CLARIFICATIONS AND AMENDMENTS:

- a. Amendments, either as an initiative of the Institute or in response to the clarifications by the prospective bidders, shall be posted on the Institute website www.nitrr.ac.in, which will be part of this tender document.
- b. Amendments to the tender shall be published on the website within 10 working days from the date of site visit. Bidders are therefore advised to submit their bids after this.
- c. The bidders have to take note of this and keep visiting the website regularly till the last date of submission of the bid. NIT Raipur shall not be responsible if information posted on the Institute website has been ignored by the bidder.

10. EMD:

Bidders shall submit an EMD of Rs. 10,00,000/- (Rs. Ten Lacs) in favour of the Director, NIT Raipur in the form of Account Payee demand draft/ Fixed Deposit Receipt / Bank Guarantee (Please refer Chapter:7 for the bank guarantee format).

The EMD is to be submitted along with the Techno-Commercial Part of the Bid and shall be refunded on furnishing of performance bank guarantee by the successful bidder.

EMD of unsuccessful bidders shall be released after receiving claim letter from such bidder.

11. VARIATION IN QUANTITIES:

- a. Actual quantities may vary from the tentative quantities mentioned in this tender document, but the total value of the variation of quantities shall not exceed 10% of the work order value.
- b. Payment for the items shall be made strictly in accordance with the actual quantities supplied and installed.
- c. Electric and Passive Data Network cables and components are subject to 30% variation on either side.
- d. Payment for the workstations shall be made in accordance with the actual numbers erected as per the final approved drawing by the CCC.

- e. The total payment for the project, taking into account of all the variations, after the work order shall not exceed 10% of the original work order value.

12. BID SUBMISSION:

- a. Both the parts (Techno-commercial and Financial) shall be sealed in separate envelopes and the two envelopes shall be placed in a third sealed envelope, which should be titled as '**Bid for CCC and TPO**' .
- b. Both the envelopes shall be labeled appropriately with the part enclosed (Techno-commercial / Financial), the tender (Tender Name, Date and Number), and the bidder (Name, Complete Postal Address and E-mail ID).
- c. Complete bid (single sealed envelope containing two separate sealed covers of techno-commercial and financial bids) must be labeled appropriately with the tender details (Tender Name, Date and Number), and the bidder (Name, Complete Postal Address and E-mail ID) submitted on or before **27/12/2016 up to 03:00PM.**
- d. The bids should be addressed to the Registrar, National Institute of Technology, Raipur 492010.
- e. Method of submission of the bid: Bids should be dropped in the Tender Box, especially kept for the purpose in the Central Stores in Main Office.
- f. The Assistant Registrar (Stores and Purchase) may be contacted in case of any difficulty related to submission.

13. BID OPENING:

TECHNO-COMMERCIAL bid will be opened on **27/12/2016** at **03:30PM**. The bidder or their authorized representatives may attend the opening of the bids.

Date and Time of Opening of Financial Bids shall be communicated to the techno-commercially qualified bidders through E-mail.

14. PRE-QUALIFICATION CRITERIA OF THE BIDDER (All the declarations should be made point wise on Rs. 100/- stamp paper)

S.No.	Eligibility Criteria	Document Required, if any
1.	Bidder should be an ISO 9001 certified organization and should have experience in comprehensive physical infrastructure design and implementation of IT spaces which should include interior furnishing, furniture, storage, racks, electrical power distribution, network, voice communication and cabling.	ISO Certificate and Relevant Work Orders
2.	Bidder should declare that the supply and installation of all the items and services will be made as per the requirement of the tender and as approved by the end user (i.e. CCC and TPO) in accordance with Chapter 3 (Specifications and Allied Technical	Declaration

	Details).	
3.	Bidder should submit the following documents: • Registration of company • Trade License • Income Tax Return Copy of 2013-14 and /or 2014-15. • PAN No. • CST Registration. • VAT No. • EPF Registration No. • Service Tax Registration No.	Copies of Documents
4.	Bidder should agree and undertake to provide comprehensive warranty for a period of one year (except where a different period has been mentioned separately with the specifications) from the date of installation for all the items supplied and Bidder should also agree to provide three years post warranty maintenance support services at the site, if required by the Institute.	Declaration
5.	Bidder should have a functional service center set up based at Raipur or must enter into a contract with a service center for providing necessary services, within three months from the date of receipt of order. First Response Time for service should be within 24 working hours (excluding Sundays/ holidays).	Address of existing service centre / Declaration to open service centre and Declaration for first response time
6.	Copies of original documents (as applicable) defining the constitution or legal status, place of registration, and principal place of business like Memorandum & Articles of Association/ Registered Partnership deed should be submitted with the tender.	Copies of Documents
7.	Audited balance sheet should be provided for the latest three (03) years available to show the financial capability of the bidder. Turnover of the company should be minimum of Rs. Ten (10) Crores in each of latest three consecutive years available. The bidder must also submit a certificate from the Auditor / Chartered Accountant in this respect.	Copies of Documents
8.	Bidder should not have been black listed/non conformity of contract from any state government, central government or any PSU. The bidder must also not be referred to or under BIFR.	Declaration
9.	Work orders and work completion certificates of similar projects containing installation of Physical Infrastructure including interior furnishing, furniture, storage, racks, electrical power distribution, network, data and/or voice communication etc. works to be submitted along with the technical bid. The works should be of any of the following: i) One (01) order of 200 Lakhs and above, OR ii) Two (02) orders for 125 Lakhs and above, OR iii) Three (03) orders of 100 Lakhs and above.	Work orders and work completion certificates
10.	A sample of any item, on demand, to be provided at NIT Raipur site for technical verification, at the cost of the bidder as a part of technical bid and before opening of the financial bid, failing which the bid will be rejected.	Declaration

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QUALIFICATION CRITERIA OF THE PRIMARY FURNITURE MANUFACTURER

S.No.	Qualification Criteria	Document Required, if any
1.	The common manufacturer of furniture worth at least 80% of the gross value of furniture items listed in this project is defined as the primary furniture manufacturer. This 80% must include workstations and chairs to be supplied with the workstations. The primary furniture manufacturer brand quoted should have completed at least three (03) fit-out projects of INR 50 Lakhs and above, in last seven (07) years, in India.	Completion certificate from the manufacturer should be submitted by the bidder along with the technical bid to substantiate.
2.	The primary furniture manufacturer should have a Sales/Support <i>Hotline Number</i> and such numbers should be visible in their official website. The primary furniture manufacturer must have minimum two of the following certifications: ISO 9001, 14001 and OHSAS 18001 certified. Certificate to be enclosed.	Copies of certificates to be enclosed
3.	The manufacturer should be registered with ESIC.	Copies of Certificate to be enclosed.
4.	The primary furniture brand quoted by the bidder must have their own factory setup in India for a minimum period of ten years. NIT Raipur reserves the right to visit the factory premises of the primary furniture manufacturer quoted by the bidder, at the cost of the Institute for verification of the same.	The address and the contact person should be mentioned.

CHAPTER 2: CONDITIONS OF CONTRACT

1. **BID PREPARATION EXPENSES:**

NIT Raipur shall not bear any expenses incurred by the bidder for preparing this bid.

2. **DETAILED PROJECT REPORT (DPR):**

After opening of financial bids and issue of letter of intent (LOI) from NIT Raipur, the successful bidder, i.e., the contractor is required to prepare a detailed project report and submit the same within 15 days of acknowledgement of receipt of LOI.

- a. The detailed project report shall be prepared after detailed site survey. One of the important activities during site survey shall be true estimation of quantities and formalization of requirements of cable routes, floor plans, drawings etc.
- b. Contractor has to prepare a detailed work plan and must ensure to execute different activities in parallel.
- c. The work order shall be issued on the basis of the DPR. Subsequent additions, if any, (within the variations allowed in this tender) shall be treated as part of this work order and no separate work order shall be issued for the same.

3. **RESPONSIBLE DEPARTMENTS:**

For the purpose of this tender, NIT user departments – CCC and TPO shall be separately responsible and take required decisions for their respective sections.

- a. The working drawings shall also be prepared in close consultation with the user departments i.e., CCC and TPO for their respective sections.
- b. These estimates and drawings shall be included by the contractor in the detailed project report and used for issue of the formal work order.
- c. The detailed project report shall be approved by the CCC and TPO for their respective sections.

4. **LOA:**

The letter of acceptance of the work order has to be sent within 7 working days of receiving the work order from NIT Raipur.

5. **FORMAL CONTRACT:**

Before commencement of work, NIT Raipur shall sign an agreement with the bidder on stamp paper of Rs. 100/- reiterating all terms and conditions mentioned in this tender document.

6. **PBG:**

Successful bidder shall be required to deposit an amount of 10% of the order value towards performance guarantee within 15 days from the date of issue of Work Order failing which NIT Raipur reserves the right to cancel the tender & forfeit the earnest money already submitted.

7. **NIT Raipur reserves the right to drop any item, completely or in part prior to issue of the work order.**

8. **TIME OF COMPLETION:**

- a. The entire work including supply and installation of all the items under this project has to be completed within four calendar months from the date of acceptance of the technically and commercially clear work order given by NIT Raipur
- b. Bidder has to plan the schedule accordingly and execute different tasks in parallel. Details of the schedule will have to be submitted by the bidder and shall be used for the purpose of periodic progress monitoring.

9. **PAYMENT TERMS:**

- a. There shall be no advance payments against this contract.
 - b. 40 percent of the total contract value to be paid on supply of workstation items (Item -1 to 5).
 - c. 20 percent of the total contract value to be paid on supply of furniture items (Item -6 to 68).
 - d. 20 percent of the total contract value to be paid on supply of 'Electronic / Electric Furnishing' Items, including Electrical & Network cabling.
 - e. 20 percent of the total contract value to be paid within 30 days from the date of installation of all items, as per scope of work of this tender.
 - f. User Acceptance after checking of technical compliances against actual installation by respective user sections i.e., CCC and TPO shall be required for payment release.
 - g. Bills have to be submitted in triplicate to CCC and TPO against material supplied and installed in their sections.
10. The common manufacturer of furniture worth at least 80% of the net value of furniture items listed in this project is defined as the primary furniture manufacturer. This 80% must include workstations and chairs to be supplied with the workstations.
11. At least 80% of the net value of furniture items shall be from the same manufacturer who is the primary furniture manufacturer. This 80% must include workstations and chairs to be supplied with the workstations.
12. Telegraphic or conditional bids will not be accepted.
13. Even though a bidder meets the above qualifying criteria, it may be subject to be disqualified at any stage of the tender process , if they have:
- a. made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements (NIT, in this regard always reserves the right to verify from any person, banker of the applicant or companies issuing credentials in favor of the applicant) and/or
 - b. record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

14. Bidder to give detailed compliance to the technical specifications, for each item and should strictly adhere to the same. Technical compliances shall be verified by CCC and TPO.
15. In case of requirement where it is possible to position a readily available product from the market, or one that has to be custom fabricated as per requirement or which the primary furniture manufacturer does not manufacture, the furniture can be of a different make.
16. Bidder shall be completely responsible for the conduct of the workers deployed by him in the Institute for the purpose of execution of this work and to the extent possible coordinate with other agency working in the Institute where required.

17. BILL PAYMENT POLICY:

- a. As per the normal practices prevalent in the Institute, bills shall take 15-30 days from submission till payment release, if all the required papers and documentation are in order.
- b. Any inquiries related to pending payments shall be made beyond this period.
- c. Any reminders or pursuance for bill clearance shall be done through e-mail, letter, fax and other official correspondence only.
- d. Any personal contact with the NIT personnel involved in the project for payment of bills, etc. shall be construed as malpractice.

18. FINANCIAL BID VALIDITY:

Financial Bids should be valid for a period of 90 Days from the date of opening of techno-commercial bid.

- 19. PRICE VALIDITY:** The prices quoted in the financial bid should remain valid for 10 months from the date of opening of the financial bid.

20. LIQUIDATED DAMAGES:

- a. If there is delay which cannot be attributed to force majeure reasons such as natural causes, war, etc. or site unavailability / site not ready conditions, LD shall be deducted.
- b. LD shall be deducted at the rate of 0.5% of work order value per week, subject to a maximum of 10% of work order value.
- c. Contractor should immediately inform in writing by mailing a scanned copy of the letter on his official letterhead to cccfur1@nitrr.ac.in if the site is not ready for some reason. Genuine delay due to SNR conditions will not be treated for imposition of LD. The contractor is also not eligible to claim any extra payment for such delay.

21. DAMAGE TO INSTITUTE PROPERTY DURING EXECUTION OF WORK:

If any damage is caused to any institute property during execution of the work by the contractor then the same shall be got repaired / replaced depending on the case by the contractor or equivalent amount shall be deducted.

22. ARBITRATION:

- a) All disputes arising out of or relating to this contract shall be resolved amicably by mutual discussions and negotiations between the parties.

- b) If any dispute remains unresolved as per the above procedure, it shall be referred to a sole arbitrator to be appointed by the Director or Head of NIT Raipur, by whatever designation he is known. Arbitrator shall be appointed within 30 days of receipt of a request being made by the party. The party shall make the request within 60 days from the date on which the dispute arose.
- c) The arbitration shall be governed by the provisions of Indian Arbitration and Conciliation Act, 1996 as amended from time to time and the award passed by the arbitrator shall be final and binding on both the parties.
- d) The Arbitrator shall give reasons for this award and the language of arbitration shall be English.

23. JURISDICTION:

The Honourable High Court of Bilaspur has exclusive jurisdiction to determine any proceeding or arbitration award in relation to this contract.

24. CONTRACT FORM:

- a) A suitable contract agreement shall be signed before starting the work.
- b) Successful bidder shall be required to enter into a contract with the Institute after the issue of the work order.
- c) Submission of the bid against this open tender enquiry by a bidder implies that the bidder is in full agreement with the terms and conditions mentioned in this tender document.

The successful bidder shall be required to affix his signature and seal on each page of this tender document and submit the same as proof of having accepted the terms and conditions mentioned herein.

- d) The contract with the successful bidder will be on Rs. 100/- stamp paper and shall contain the terms and conditions mentioned under the different chapters and sections of this tender document.

CHAPTER 3: SCHEDULE OF REQUIREMENTS (Including Scope of Work)

Items 6,7,19, 61 and 62 are left blank. Bidder must ignore them.

S.No.	ITEM	QTY FOR CCC	QTY FOR TPO	NET QTY
1.	50 mm thick Workstation / Table top size 750X600mm (w/o Partition Panel)	160	0	160
2.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	225	0	225
2(a)	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	0	5	5
3.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 1050mm x 600mm	35	0	35
4	KBPT	460	15	475
5	CPU Trolley	460	15	475
6	--	--	--	--
7	--	--	--	--
8	Self Standing Table Desk with Pedestal	14	0	14
8(a)	Self Standing Table Desk with Pedestal	0	3	3
9	Workstation Chair Medium Back Revolving Chair	435	5	440
10	Visitor Chair	52	0	52
11	Single Bed	8	0	8
12	Corner Table	4	0	4
13	Comfortable Chair	8	0	8
14	Mattress 1950mm X 1000mm	8	0	8
15	Pillow	8	0	8
16	Bedsheet and Blankets	8	0	8
17	Wardrobe	4	0	4
18	Heavy Duty Work Table of Depth WxDxH 1800mm x 900mm x 750mm	4	0	4
19	--	--	--	--
20	High back chair	6		
21	Steel Almirah	24	3	27
22	4 Seater Table Plyboard Top	6	0	6
23	Reception Table - 1800mm X 600mm (for 3 persons)	3	0	3
24	Personal Locker Unit	15	0	15
25	Executive Desk (2400 X 1050 X 750) mm with pedestal & Side Unit	1	1	2
26	Back Unit (1000W X 450D X2100H)mm.	2	2	4
27	Executive High Back Chair	1	5	6
28	Magnetic board (900 X 600)mm.	3	1	4
29	White board (900 X 750)mm.	3	1	4
30	Medium Chair	4	0	4
31	Executive sofa (3+1+1)	1	1	2
32	Premium lounge Chair (3 Seater)	10	4	14
33	Corner Table	2	4	6
34	Coffee Table with Shelves	1	1	2
35	Executive Desk (2100 X 900 X 750)mm. with Pedestal Storage Unit & Side unit	1	0	1
36	Back unit (2250 X 400 X 2000)mm	1	0	1
37	Executive High Back Chair	1	0	1
38	Medium back Chair	3	0	3
39	Coffee Table with Shelves	1	0	1
40	Corner table	2	0	2
41	3 seater Sofa	1	0	1
42	Single seater sofa	2	0	2
43	Movable Storage System: Single faced static unit - 1980H X 1830W X 457D mm	2	1	3
44	Movable Storage System: Single faced movable unit 1980HX1830WX457D mm	2	1	3
45	Movable Storage System: Double faced movable unit - 1980H X 1830W X 914D mm	2	1	3
46	Channel 9 ft.	2	1	
47	3 seater Sofa	1	0	1

48	Single seater sofa	2	0	2
48(a)	Comfortable Sofa Set (3+1+1)	0	1	1
48(b)	Sofa set (3 seater)	0	1	1
49	High back chair	0	20	20
50	Medium back Chair	31	32	63
51	4 door Book case (914mm Wx 380mm Dx 1750mm H)	8	3	11
52	Executive Table(1650 X 750) mm., side unit & Back storage unit	1	1	2
53	10-Seater Conference table	0	2	2
54	Discussion/Meeting table (4 seater)	0	8	8
55	Fixed type educational training chair	0	140	140
56	Self Standing Table with pedestal (1800 X 900 X 750)mm	1	0	1
57	Mesh High back chair	0	1	1
58	Fixed Visitor Chair	0	9	9
59	Coffee Table: size is 1200mm (W) x 600mm (D) x 450mm (H)	1	0	1
60	Coffee table: size is 1000mm (W) x 600mm (D) x 450mm (H)	1	1	2
61	--	--	--	--
62	--	--	--	--
63	Self Standing Table with metal leg(1200 X 600)mm. & pedestal	4	0	4
64	Mesh high back Chair	3	0	3
65	Self Standing Table with metalic leg & pedestal (1650 X 900 X 750)mm.	16	0	16
66	Curtains with Curtain Rods and Fixtures; Length of Curtain Rods = 200 meters Area of Curtains = 600 square meters	As per site requirement	As per site requirement	
67	Stackable Cafeteria Chair	0	150	150
67a	Stackable Chair with Arms	150	0	150
68	Slotted Angle Rack	5	0	5
69	1' x 2' Mirrors	0	4	4
	PASSIVE CABLING AND NETWORKING RELATED Bidders must ignore Item No. 2			
1.	Network Cabling: Horiz. UTP cabling for approx. 500 nodes dual port across 3 floors			
1 (a)	Cat6 UTP Cable, Blue (Box of 305 mtrs)	100		100
1 (b)	Cat6 Patch Cord, 1 Mt., Green	500		500
1 (c)	Cat6 Patch Cord, 2 Mts., Green	500		500
1 (d)	24 Port unloaded modular Jack Panel	42		42
1 (e)	Cat6 UTP Jack, White	2000		2000
1 (f)	Dual shuttered Face Plate	500		500
2-	--	--	--	--
3.	Network Cabling: Racks for 3 floors			
3(a)	12U, Wall Mount Rack with all accessories	6	4	10
3 (b)	42U (600 x 1000 mm) Rack with vertical cable channels, 6 horizontal cable manager, two vertical power manager Castor wheel, Fan, 4 pkt of Hardware Front Panel and other accessories, as per specifications.	4		4
4.	Network Cabling: BIS/ISI marked perforated cable trays of make approved by CCC for laying electrical and data cables. The trays shall have to be fixed on mounting brackets on the floor or suspended from the ceiling, as per site requirement and approval of the client. The cable tray height shall be 50 or 75 mm. Tray widths shall be 50, 100, 150, 300, 450 & 600 mm and shall be installed as per site requirement. Cable trays shall either be hot-dipped galvanized or powder coated, as per standards. The cable tray system should include all mounting & fixing accessories, e.g. vertical / horizontal bends, inside / outside bends, reducers, etc. The trays shall have to be pre-painted in order to distinguish between a power and network. The bidder has to submit a detailed cable tray layout detailing various cable tray types with quantities along with the bid. Cable Tray Sheet thickness = 1.2 - 1.5 mm; Height = 50-75mm Width = 600mm (50 metres) Width = 300mm (100 metres) Width = 150mm (200 metres)	As per site requirement		As per site requirement

5.	PVC Conduit, in meters	600 metres		600
6.	Network Cabling: Snap-on columns and DLP U-PVC/aluminium/snap-on trunking system for power and data distribution, as per site requirement. Total: 2000 metres	As per site requirement		As per site requirement
7.	Network Cabling: Floor boxes /groumets /desktop extensions/ pop-up boxes for cable junction/termination, as per site requirement.	50		50
7 (a)	Consolidation Boxes, (2U+2U) for termination of network cables.	4		4
7 (b)	Raised Access Flooring (in Sqmt), using steel panel having a cemetitious core, HPL pre-fixed, PVC beads with edge support rigid grid understructure system. Access floor system to be installed shall provide a maximum finished floor height of 450 mm from the existing floor level. The system shall provide for suitable floor tiles, pedestals and stringers designed to withstand a minimum UDL of 500 Kgs / Sqmt.	20		20
8.	Network Cabling: Installation Services			
8 (a)	Laying of UTP Cable	30500 metres		30500
8 (b)	Termination of 24 Port Cat6 Jack Panel	42		42
8 (c)	Termination of Cat6 I/O	2000		2000
8 (d)	Installation of 12U Rack	As per site requirement		As per site requirement
8 (e)	Installation of 42U Rack	4		4
8 (f)	Installation of Cable Trays/Raceways etc. Total: 350 metres	As per site requirement		As per site requirement
8 (g)	Fixing of PVC Conduit	600 metres		600
8 (h)	Fixing of consolidation boxes	4		4
8 (i)	Installation of Raised Access Floor including necessary tile cuttings, etc.	20 square metres		20 square metres
	ELECTRICAL CABLING RELATED			
1.	Flexible Cu cable, 3 x 2.5 sq. mm.; rodent and fire resistant; BIS/ISI marked; make approved by CCC	3000 metres		
2.	Modular Power Sockets and Switches with back boxes / face plate; BIS/ISI marked; make approved by CCC	500		
3.	Power Distribution Boards (PDB); BIS/ISI marked; make approved by CCC	12		
	RODENT REPELLANT SYSTEM			
.1.	Rodent Repellent System: Rodent Repellent System shall be provided to protect the premises against any rodent infestation, the technical specification of Rodent Repellent System are as given below: (a) General Objective: The objective is to protect the entire premises against rodents. The purpose is to keep the rodents away from the floor by generating very high frequency sound waves (above 20 KHz) which are not audible to human ear but irritates rodents. The objective is to protect all the cables below floor, above ceiling & room void from damage caused by rodents. (b) Scope: The system proposed should protect all the ICT equipments with relevant type of high frequency sound producing device called satellites or transducers. The number of transducers should ensure that the premises are rodent free.			
2.	Rodent Repellant System: Ultrasound Satellites: a. The satellites or transducers shall be circular ceiling mounted low profile units that produce high decibel sound waves at very high frequency not less than 20 KHz. b. These satellites shall cover an area not less than 400 Sq.ft for Room void application, for ceiling voids & floor void applications. c. No looping is permitted while connecting the satellites to the main controller. d. Every satellite connected to the controller shall have a dedicated connection with the controller.	96		

3.	Rodent Repellant System: Controller Features: - The controller shall support 12 Transducers and shall come with a pair of stands and brackets. - The controller shall be installed in the Control / Switch Room and the transducers in the problematic areas i.e. above and below false ceiling and below false flooring. 2500 Sq. Feet of Area Coverage per system/ Controller - Shall drive up to 12 Transducers. With minimum @ 250sft coverage each - LCD display with on-board controls for changing parameters	8		
4.	Rodent Repellent System: Mounting Rack	8		
5.	Rodent Repellent System: Flexible cable	3000 metres		
6.	Rodent Repellent System: Installation Services	1 Lot		
	ELECTRONIC/ELECTRIC FURNISHING ITEMS			
1.	Audio Visual System			
1.1	240W Power Amplifier with gain control and high-pass filter, as per specifications. (01 per classroom)	4	1	5
1.2	Professional high quality Gooseneck Microphone, as per specifications. (01 per classroom)	4	1	5
1.3	Miniature omni directional electret condenser lavalier type microphone. (01 per classroom)	4	1	5
1.4	Wall mount column speakers, 20 W RMS, Frequency response 150 Hz - 10 KHz, along with mounting accessories, as per specifications. (04 per classroom)	16	4	20
1.5	Wall mount rack, 6U, as per specifications. (01 per classroom)	4	1	5
1.6	Portable Wireless LCD Projector, brightness of 4500 lumens, built-in speaker, along with ceiling mounting bracket, as per specifications. (01 per classroom)	4	1	5
1.7	Interactive / Electronic Whiteboard, as per specifications. (01 per classroom)	4	1	5
1.8	Cables & conduits, as per site requirement.	600 Mtrs	200 Mtrs	800 Mtrs
1.9	Installation, Commissioning & Testing, of the above.	4 lots	1 lot	5 lots
2.	Public Address System			
2.1	MP3 player for Existing PA System	1	0	1
3.	Water Coolers with complete RO & UV system, as per specifications.	3	1	4
4.	Two-door refrigerators, as per specifications	2	1	3
5.	Microwave Oven, as per specifications. To be supplied with standard cookware set	1	1	2
6.	Induction Cooker with Cookware Set	1	0	1
7.	Coffee Tea Soup Vending Machine	1	1	2
8.	IP Surveillance System			
8.1	Megapixel IR Dome Network Camera with Varifocal Lens, PoE, ONVIF Profile S Compliant, UL Listed	As per site requirement	As per site requirement	45
8.2	Network Attached Storage with 50 TB HDD	1	0	1
8.3	Open Platform Video Management Software including 45 nos. of camera connection license	1	0	1
8.4	Video Management server	1	0	1
8.5	i5 4th generation workstation with dual graphics card	1	0	1
8.6	42 inch Full HD LED TV, as per specifications	1	2	3
8.7	60 inch Smart LED Full HD TV with Ethernet Port / Wi-Fi, USB, HDMI port, as per specifications.	2	0	2
8.8	Cat 6 cable, conduit/casing, fixing materials including cable laying, cabling charges	As per site requirement	As per site requirement	2000 metres
8.9	Installation, Testing, Training and Commissioning Charges	1 Lot	0	1 Lot
9.	Main Distribution Switch Room Electronics Cooling System Unit	4	0	4

SCOPE OF WORK

1. Project shall involve supply and installation of ready factory made furniture items
2. Project is likely to involve the supply and installation of some custom fabricated furniture items.
3. Project shall involve supply and installation of passive network components and cables including accessories like cable trays, casing and capping, false flooring and consolidation boxes etc. in the main distribution switch room, racks, etc.
4. Bidder is required to supply and install several hundred IO boxes to the furniture and also carry out the associated structured network cabling which will include supply and installation of such items as IO box assemblies, CAT6 UTP cables, network racks, patch panels etc. whose specifications are mentioned in this document.
5. Project shall involve supply and fixing of electrical cables and components.
6. Several hundred electric switches and sockets have to be fitted to the furniture items and wired to the electrical distribution boards. These shall be use to power the enterprise grade PCs and workstations.
7. In case there is shortage of electric distribution points which has to be identified and brought to notice prior to the bidding itself, the bidder shall be required to supply and install the required numbers of distribution boards/panels also.
8. KBPTs shall be attached to all workstations and other tables except those where instructions are given.
9. Individual workstations and tables have to be equipped with four switches and sockets of 6A Indian round type.
10. Individual workstations and tables have to be equipped with one twin port IO box.
11. Project shall involve supply and installation of rodent repellant system to safeguard the cables from rodents.
12. Project shall also involve supply and installation of audio visual system, public address system, IP surveillance system, water coolers with RO and UV, refrigerator, vending machine, microwave, induction set etc.
13. Bidder has to route the cables through specially built underground raceways to the extent feasible.
14. Bidder may have to erect data and electrical posts to route the network cables (from the main network switch room of the building) and electric cables (from the electrical distribution boards) over the false ceiling in appropriate channels to the furniture to cover spaces where the underground raceways prove to be inadequate to carry requisite numbers of cables or have not been built.

Use of wall and column mounted channels for vertical routing shall however be preferred over erection of separate electrical and data posts.
15. Bidder has to install the overhead data and electrical wiring in different cable trays. They must also have readily distinguishable colors like red for power and blue for data etc.
16. Separation between power and data cables, minimum bend radius of cables etc. has to be maintained as per structured cabling standards.

17. In networking and electrical cabling the proper terminations of the cables and testing are important and so are feruling, labeling of the cable terminations.
18. Contractor shall be required to do the same and also get the network channels tested and submit the pentascan reports thereof. Electrical cables must also be duly tested.
19. Bidder has to undertake to get the site certified from the manufacturer of the passive components supplied under this project.
20. Bidder has to ensure that the passive cables, components and accessories supplied under this project are strictly as per the technical specifications mentioned in this tender document
21. Bidder has to ensure that the electrical cables, switches, sockets, distribution boards etc. supplied under the project are of ISI/BIS mark and the make is duly approved by CCC before the installation. Power cables must have rodent and fire protection mechanisms.
22. Dimensions of the furniture mentioned in the specifications are approximate except for the workstations. Bidders shall try to match them as closely as possible. NIT user departments - CCC and TPO shall, in general, not be insistent on such matters and where minor technicalities e.g., lifting or locking mechanism, material etc. are involved, if the functional, aesthetic, proportionality, ergonomic, strength and safety requirements are by and large met.
23. Customizations for meeting the requirements are also permitted. However, it is in the interest of the bidder to clarify any and all such issues during the pre-bid meeting. The decision of NIT user departments in such matters shall be final and binding on the bidder.
24. Bidder has to ensure that the manufacturer of passive components extends a defect liability period of 3 years and a performance warranty of 25 years or lifetime to the passive cables and components supplied under the project.

CHAPTER 4: SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

Items 6,7,19, 61 and 62 have been left blank. Bidder is to ignore them. Where non-bracketed and bracketed values are mentioned, bidder may ignore the bracketed values, otherwise where only bracketed values are mentioned, bidder has to consider the same.

S.No.	ITEM	QTY	SPECIFICATION	Compliance (Yes/No)	Deviations, if any	Remarks
1.	50 mm thick Workstation / Table top size 750X600mm (Workstations w/o partition panel)	160	Modular panel based linear workstations to be supplied under this project should preferably have the following minimum technical specifications: Modular Panel based Linear Workstations with 50 mm thick partition of 1200 mm height. The entire structural frame viz. horizontals and verticals shall be made out of 50 mm thick high quality aluminum extruded interlocking sections. Semi-circular top and vertical trims shall be made of aluminum extrusions which shall be of snap fit type. Provision of dual management facility shall be available. As per the international standards corner caps and top caps shall be made of Zinc moulds. Levelers are provided to overcome unevenness in the flooring. Snap fit tiles comprise of 4 mm MDF board on both side making 48 mm thick over all. The back could either made of natural glass 4/5mm or magnetic fabric board or plain white/marker board. All 50 mm snap fit panel fixtures shall be made out of zinc moulds. The top, vertical and corner trims are available in standard powder coating (moon shell grey) finish of international standards. The table top shall either be (750 X 600 mm.) or (1050 X 600 mm.) or (1350 X 600 mm.). Top fabricated out of 25 mm thick plain particle board interior grade conforming to IS 12823:1990 and the top with laminate of thickness 0.7 mm as per IS 12823: 1990 of approved brand. All components like tops, sides etc. are finished with machine pressed 2mm thick PVC EDGE binding tape glued with hot melt EVA glue. Support shall be through Gable Ends. Wire Management: Raceway to be provided which shall run below table top for termination of power and data sockets, as per requirement.			
2.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	225				
2(a)	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	(5)				
3.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 1050mm x 600mm	35				
			As an alternative to manufacturers who make such workstations with steel frames, the following minimum technical specifications are stipulated: Modular Tile Based System with nominal thickness of 50 mm, wherein the system takes care of the functional, ergonomic, aesthetical requirements. The trim width is 56.5 mm and the thickness of panel after fitting the tiles on frame is 52 mm. Main structure of combination of frames varying in heights from 2.9 feet to 5.3 feet and widths varying from 1.0 foot to 4 feet. It has Vertical upright made from 1.5mm thick CRCA M.S. Grade D formed into "C" channel of 28.4 X 40. The top horizontal is a 1.2 mm thick M.S. tube			

			of 25.4 X 25.4 mm (1 X 1 inch). The bottom horizontal is a 1.5 mm thick M.S. 'C' channel of size 38.1mm x 25.4 mm (1½ in x 1 in). The frame is powder coated in standard black colour. The pitch for mounting the brackets on the upright is 25.4 mm. The rectangular slot for wires on the upright is 60mm (H) x 18 mm (W), 1 no. at the bottom and 2 nos. at the intermediate level wherein each slot can allow 9 power cables of Dia.10 or 32 data cables of Dia. 6. The bottom horizontal would also have 2 slots for carrying wires, which are of the size 100mm (L) X 20mm (W) for wire carrying. At 180° joinery, a vertical gap of 4.8mm would be present between 2 adjacent tiles. Free standing modules can be offered with Stability post. The frames are fitted with removable tiles, which can be offered in various finishes & sizes as follows. Fabric Magnetic Tile: Fabric magnetic tiles are 0.6 mm thick GI Sheet metal tiles, which are fabric upholstered. Including the fabric thickness of 0.7 mm. Fabric Tackable tiles are fabric upholstered metal tiles in 0.6 mm thick GI Sheet, with P.E. foam in the tile for tackability. These tiles are upholstered with Fabric. Plain Metal tiles are powder coated metal tiles in 0.6 mm thick M.S. CRCA Grade D as per IS:513 -1994. Frames are fitted with Flat Trims of 56.5 mm X 10.5mm and average wall thickness of 1.0 mm. These trims are made from Powder coated aluminum alloy (of grade He-9 – 63400) extrusions. The trims are fitted on the top horizontal using M6 X 35L Nut-bolts and the open vertical ends of the upright using M6 X 25L Bolt & Nut. Joinery Trims: The open vertical joineries for the configurations of 2 way and 3 way 90° will be covered with 2 way 90° (square type) and 3 way 90° aluminum alloy (of grade He-9 – 63400) Vertical trims of 1.2 mm average wall thickness, which will be powder coated and press-fitted onto the universal connector made of 2.0mm thick M.S. using the 0.5mm thick spring steel snap fit clip. Support Brackets: The worksurfaces are mounted on the New 13" inch worksurface bracket of 2.0mm thick M.S. A corner bracket is used to support the worksurface at the corner junction of the frames. Side panels will be attached to the upright using the side panel brackets. Transaction top will be mounted on the transaction top brackets. Worktop 25 mm thick prelaminated (with PVC lipping) - Work top shall be made of 25mm thick Prelaminated particle board (As per IS:12823). All the edges of work surface shall be with edge banding.			
4	KBPT	475	Workstation should be provided with Metal Key board Pull Out tray and CPU trolley on castors wheel. All these workstations should have Metal Key board Pull Out tray of size 522 mm (W) X 415 mm (D) X 110 mm (H). The metal tray to be made out of 0.9 mm thick MS CRCA 'D' grade as per IS:513. The ball slides are to be made of a combination of 1.2 mm and 1.5 mm thk toll formed CRCA 'D' grade as per IS:513. A retro fit mouse pad along with Key board MS Sheet should be provided which is to be made out of 0.9 mm thk CRCA 'D' grade as per IS:513.			

5	CPU Trolley	475	CPU trolley on castors wheel will be part of each workstation. The tray should be made of 1mm thk MS CRCA sheet and side supports are made of 0.8mm thk MS CRCA sheet. Castors should be injection moulded in black nylon.			
6	--	--	--	--	--	--
7	--	--	--	--	--	--
8	Self Standing Table Desk with Pedestal	14	Self Standing Table comprising of table top, side panels and a pedestal unit. The overall dimension of the desk unit to be 1500 (L) x 750 (D) X 750 (H) mm. The table top shall be made out of 25 mm thick prelaminated particle board finished with 2 mm edge lipping. Support of the unit shall be through gable ends. The right mounted pedestal shall be of size 450 (W) x 450 (D) x 725 mm (H). The mobile pedestal 2D+1F to be provided with handles and central locking system.			
8(a)	Self Standing Table Desk with Pedestal	(3)	Self Standing Table comprising of table top, side panels and a pedestal unit. The overall dimension of the desk unit to be 1200 (L) x 750 (D) X 750 (H) mm. The table top shall be made out of 25 mm thick prelaminated particle board finished with 2 mm edge lipping. Support of the unit shall be through gable ends. The right mounted pedestal shall be of size 450 (W) x 450 (D) x 725 mm (H). The mobile pedestal 2D+1F to be provided with handles and central locking system.			
9	Workstation Chair Medium Back Revolving Chair	440(5)	Medium Back Staff chair with tilting mechanism with locking systems, Approved colour fabric for seat & back with fixed armrest and arm pad, gas lift for height adjustment, Chrome base with castors. Seat Pan Height shall be adjustable in the range of 15"- 20" . Seat Pan Depth shall be in the range of 15"-17" with a waterfall sloping front edge. Seat Pan width shall be in the range of 18"-20". Seat Pan angle shall be adjustable in the range of 0-10 degrees. Seat Back height shall be minimum 15". Back Width shall be minimum 18". Padding shall be provided on seat pan, backrest and armrests. Lumbar support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			
10	Visitor Chair	52	Medium Back. P.U. arms & castors with Foam Cotton upholstery. Seat Pan Height shall be in the range of 16"- 21". Seat Pan depth shall be in the range of 15"-17. Seat Pan width shall be in the range of 18"-20". Seat Back height shall be minimum 24". Padding shall be provided on seat pan & backrest The fixed type chair unit shall be supported by a rectangular tubular frame (which is available either in black /powder coated or SS). To be supplied as per approved color and with/without castors.			

11	Single Bed	8	Single Bed made of Green (Ecotec) Ply having frames and legs made of wood. The head partition shall be rectangular type having smooth edges and polished. The rectangular frame of the bed would form a 25 mm cavity inside to support a mattress. The steel legs shall be round shaped with smooth edges. Overall Dimensions 1950 (L) x 1000 (W) x 900 (H).			
12	Corner Table	4	Rectangular Corner Table consisting of an under frame, made of rubber wood, and a designer top of high density plywood. The table top shall be 25-30 mm thick, size 600 (L) x 600 (W) and the under table would be of size 450 x 450 mm, approx. The overall finished height of the table shall be 600 mm.			
13	Comfortable Chair	8	The Premium Lounge Chair is a relaxing armchair in a classic mould-high back cosy seat and an elegant transitional design style that can fit into any decor. With classic blends and soothing colors, this chair fits perfectly as a relaxing lounge chair. The seat and the fixed high back are highly cushioned and fabric finished. The chair is supported with four strong square shaped wooden legs finished with natural polish.			
14	Mattress 1950mm X 1000mm	8	It has breathable fabric cover, soft quilting and extra support. The overall thickness should be 100mm. Good quality cotton bed sheet appropriate for the bed size.			
15	Pillow	8	Open cell structure that reacts to the body heat and weight by moulding to the sleepers Body. Organic Cotton Fabric for extra comfort. Anti fungal and anti allergic. Durable and excellent neck support. Size : 400mm X 600mm.			
16	Bedsheet and Blanket	8	Premium quality bedsheets and soft blankets for single beds of approved color and print.			
17	Wardrobe	4	This double swing door wardrobe has a classy touch and has been designed for ease of use. Designed to give you ample storage space, with handy drawers for neat arrangement of your things. This two-door wardrobe shall have a three way bolting mechanism and shutters supported by SS hinges. The wardrobe shall consist of multiple shelves having space for other items. The top will have adequate space for hanging clothes from a metal rod. The wardrobe shall be made out of MS structure with 22 gage non corocive sheet metal and finished with 40 micron powder coating. Dimensions: 2'6" (Width) X 1'9" (Depth) X 6'3" (Height).			

18	Heavy Duty Work Table of Depth WxDxH 1800mm x 900mm x 750mm	4	Heavy Duty tables should be of modular type. Based on latest technology, these lab tables are widely used in clean rooms, laboratory and in zones that demand high non-contamination conditions. The modules should be designed in such a way that the modules can be dismantled very easily in case of maintenance, if required. The table top shall come in two options - either with solid wood or with black granite. The under storage modules will be independent and entire load on the work surface will be sustained by the base frame. Under bench storage modules will have drawer and bottom cupboard and front open shutter. The drawer and cupboards will have necessary locking arrangements. The table should have an overall load carrying capacity of 250 Kgs or more.			
19	—	—				
20	High back chair	6	High Back. P.U. arms hydraulic, tilting & Chrome finish base with Cotton upholstery. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			
21	Steel Almirah	27 (3)	It should have multi bend construction with interlocking design and full length over lapping doors and sides. It should have three way bolting mechanism. All steel components should undergo eight tank anti rust treatment and oven baked epoxy polyester powder coated with 50-60 dry film thickness. The CRCA steel sheet used for the body should be 0.9 mm thick, as per IS-513 1994. It should have 4 shelves made of 0.8 mm thick CRCA steel sheet. It should have six lever Mazak Zinc Plated Lock. It should have scratch hardness of 3 Kgs as BS-3900 part E2 1970, IS-101. It should sustain salt spray test of 1000 hrs. as per IS 101. Overall size: 2000 mm (H) x 900 mm (W) x 450 mm (D)			
22	4 Seater Table Plyboard Top	6	The table is to be made of commercial IS:303 plyboard with thickness 25 mm. Top size (1200 x 600) mm. The height of the table should be 600mm. Four legs to be made from Solid Wood, size 8 x 8 x 60 cm. Laminate of thickness 1mm			

23	Reception Table - 1800mm X 600mm (for 3 persons)	3	Supply of self standing reception table made of MDF board of 25, 18 mm thick, conforming to IS 12823 of latest edition with PVC edge banding, and 18mm MDF board front modesty panel. The unit will have two pencil drawer and one filing drawer fixed with drawer chanel and with central locking system. The table would have three glass tops (12mm.thick) at a hight of 150mm. from the front panel and supported by round ss studs and fixed with ss bolts. The work would include by colour wooden wall paneling (100 sft. approx) on the back ground wall. the paneling would have provision for fixing light fixtures as per approved drawing. The overal size of the reception table (1800mm x 600mm X 750mm).			
24	Personal Locker Unit	15	The personal locker unit will be a unit with 18 personal lockers each having a depth of (450mm. approx). There shall be six rows with three lockers in each row. It should have roll formed side, back and sides of drawers. It should have 10 lever cam lock. All the drawers should be mounted on nickel chrome plated ball slides. It should have anti tilt mechanism and anti rebound mechanism. All steel components should undergo eight tank anti rust treatment and oven baked epoxy polyester powder coated with 50-60 dry film thickness. The CRCA steel sheet used should be 0.6 mm thick as per IS-513 1994 and powder coat finished. It should have scratch hardness of 3 Kgs. The overall dimension of the personal locker cabinet would be: 2000 mm (H) x 900 mm (W) X 450mm. (D) along with ss rectrungal legs at a ht. of 100mm.			
25	Executive Desk (2400 X 1050 X 750) mm with pedestal & Side Unit	2(1)	Supply of self standing executive table made out of MDF board of 25,18 mm thick, conforming to IS 12823 of latest edition. Supply of side unit made out of MDF board of 19mm thickness with PVC edge banding, and 50mm MDF board on the top. The unit will have two pencil drawer and one filing drawer fixed with drawer chanel and with central locking system. The main table is of size 2400mm (W) x 1050mm (D) x 750 mm (H), with top thickness of 50 mm. The top of main table and ERU is to be made of Medium Density Fiber Board. Veneer with PU coating is to be pasted on this MDF. Supplying of side unit with shelves made out of 18 mm MDF on all sides including shutters, except back. Back shall be made out of 9 mm Medium Density Fiber board. It should have a PVC edge bending. The entire structure should be completed with proper hardware and fittings as necessary. Dimension: 1350 mm (W) X 450mm. (D) X 725mm. (H) Pedestal unit is to be made of MDF, Veneer to be pasted on the same and then PU coating is to be applied. Size should be (W – 450 mm x D – 450 mm x H – 725 mm.) Back Unit is made of Medium Density Fiber Board with double glass doors on the top and with double door sutter unit with handles and lock at the bottom and as per approved drawing. Veneer with PU coating is to be pasted on this MDF. Back unit size shall be (1000 W x 450 D x 2100 H.) with glass thickness 5 mm., with two such unit placed side to side to form a single unit. The colour and polish shall be as per approvals.			
26	Back Unit (1000W X 450D X 2100H)mm.	4(2)				

27	Executive High Back Chair	6(5)	High Back. P.U. arms hydraulic tilting & chrome finish base with foam leather upholstery with extra lumbar support with fine tuning for depth adjustment, with swivel & depth Adjustable arm pad & option of PVC padding, gas lift for height adjustment, five-prong base with castors. Seat Pan Height shall be adjustable in the range of 16"- 21" . Seat Pan Depth shall be in the range of 17"-22" with a waterfall sloping front edge. Seat Pan width shall be in the range of 22"-28". Seat Pan angle shall be adjustable in the range of 0-15 degrees. Seat Back height shall be minimum 30". Back Width shall be minimum 20". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			
28	Magnetic board (900 X 600)mm.	4(1)	Magnetic Tack Board: Magnetic board with platform, Fabric finish and aluminium extrusion on top and side edges. Fabric finish on front side.			
29	White board (900 X 750)mm.	4(1)	White Board of suitable and approved size shall be wall hanging whiteboard with aluminium extrusion on all edges.			
30	Medium Chair	4(0)	Medium Back Staff chair with tilting mechanism with locking systems, Black Fabric for seat, Mesh back with Adjustable arm pad, gas lift for height adjustment, Chrome base with castors. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-17" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 14". Back Width shall be minimum 12". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be made out of ss tubes with PU padding. Base shall have 5 SS casters. It shall be possible to make all the adjustments from the seated position. Color shall be as per design approvals,			
31	Executive sofa (3+1+1)	2(1)	These high end Sofa sets address the concern about comfort and aesthetics with plush upholstery and strong cushion base. The Polyurethane Foam and S- spring webbing adds a cozy and sinking feeling to the sofa. The wooden arms and legs perfectly match with the aesthetics of the sofa. Generous armrest structure and extended lumbar support of these sofa provides a floating and exceptional comfort. Also the back rest and the arms are filled with Silicon Fill which provides maximum comfort. WxDxH = 1 seater (1020x920x950) & 3 seater (1960x920x950). Leather : Synthetic. Frame Material : Tropical Solid Wood. Seat Foam : Polyurethane Foam with recon			

			sheet. Foam Density : 36 kg/ cubic cm. Back Foam : Polyurethane Foam with silicon fill. Foam Density : 36 kg/cubic cm. Seating Material : Pocket spring polyurethane foam encased. Webbing Material : S-spring.			
32	Premium lounge Chair (3 Seater)	14(4)	Crafted from high quality steel and chrome and with leatherette cushioned seats & backrest, these public or visitor seating chair units are sturdy and strong. The whole unit shall be a welded assembly of seat back and side frame. The side frame and back to be made of CR steel sheet with oblong perforations. They shall be welded to the side frame assembly. The seats shall be sloped backward for comfort seating against a full back seat. The 3-seat unit shall be supported by twin armrests only at the two side ends. The 3-seat unit shall be around 1775 mm (L) and 675 mm (D). The overall height should not exceed 500 mm from the floor. The unit shall either be freely placed or bolted to the floor to give a fixed floor position.			
33	Corner Table	6(4)	Corner Table with semi-transparent toughened glass top having either a plain or chequered surface and wooden frame having size of (500x 500x 700) mm. The entire wood structure to be finished with natural polish.			
34	Coffee Table with Shelves	2(1)	Coffee table top made of clear toughened glass, 12mm thick. The frame and supporting legs shall be made from solid wood having smooth edges and finished with natural polish. The table shall have a shelf which is made out of semi-transparent glass supported or hard wood framework. As per approved drawing and design. 1200 (L) x 450 (W) x 600 (H) mm.			
35	Executive Desk (2100 X 900 X 750)mm. with Pedestal Storage Unit & Side unit	1	Supply of self standing executive table made out of MDF board of 25, 18 mm thick, conforming to IS 12823 of latest edition. Supply of side unit made out of MDF board of 19mm thickness with PVC edge banding, and 54mm MDF board on the top. The unit will have two pencil drawer and one filing drawer fixed with drawer channel and with central locking system. The main table is of size 2100mm (W) x 900mm (D) x 750 mm (H), with top should be postform, thickness of 50 mm. The side table is of size 1200mm (W) x 450 mm (D) x 725mm			

36	Back unit (2250 X 400 X 2000)mm	1	(H), top thickness of 25 mm, in matching finish of the main table. The top of main table and ERU is to be made of Medium Density Fiber Board. Veneer with PU coating is to be pasted on this MDF. Drawer unit is to be made of MDF, Veneer to be pasted on the same and then PU coating is to be applied. Size should be (W – 450 mm x D – 450 mm x H – 725 mm.) Modesty panel thickness to be provided (same material as of the table top). Back Unit is made of Medium Density Fiber Board with double glass doors on the top and with double door sutter unit with handles and lock at the bottom and as per approved drawing. Veneer with PU coating is to be pasted on this MDF. Back unit size is (2250 W x 400 D x 2000 H.) with glass thickness 5 mm.			
37	Executive High Back Chair	1	High Back. P.U. arms hydraulic, tilting & Chrome finish base with Foam Leather upholstery with extra lumbar Support with fine tuning for depth adjustment, with swivel & depth Adjustable arm pad & option of PVC padding, gas lift for height adjustment, Standard 5-prong P base with castors. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			
38	Medium back Chair	3	Medium Back. P.U. arms hydraulic, tilting & Chrome finish base with foam leather upholstery. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			

39	Coffee Table with Shelves	1	Coffee table top made of clear toughened glass, 12mm thick. The frame and supporting legs shall be made from solid wood having smooth edges and finished with natural polish. The table shall have a shelf which is made out of semi-transparent glass supported on hard wood framework. As per approved drawing and design. 1200 (L) x 450 (W) x 600 (H) mm.			
40	Corner table	2	Exquisite Corner Table with semi-transparent toughened glass top having either a plain or chequered surface and wooden frame having size of (500x 500x 700) mm. The entire wood structure to be finished with natural polish.			
41	3 seater Sofa	1	This executive leatherette sofa set brings in opulent feel and look. Defined cuts and a refined silhouette exude modernity and style. A sturdy solid wood frame layered with fine leather ensures durability. This 3+1+1 seater sofa set offers quality seating with a generous dose of style. Salient Features: * Use of premium quality solid wood * Made using top grade leatherette. Dimensions : 37 inch (Height) x 98 inch (width) x 39 inch (depth) ; 1 Seater : 37 inch (height) x 38 inch (width) x 39 inch (depth). The design and color of the sofa should have to be pre-approved before delivery.			
42	Single seater sofa	2				
43	Movable Storage System: Single faced static unit - 1980H X 1830W X 457D (mm.)	3(1)	Single faced movable unit - 1980H X 1830W X 457D (mm.) Overall height of compactor from ground level to compactor top panel = 2080mm. (i.e. 1980mm. Body + 65mm. Base frame + 35mm. Track & moving clearance) Load bearing capacity per shelf – 70Kgs. Attractive Body With Fine Finish: Body is made of prime quality Pre-coated sheet of 0.8 mm. thickness with protective film material. Body is Weld less with multiple bends & inbuilt upright in front panel. Back panel of the body is in two parts for achieving more strength of the body. Central partition (Shear side) is made of two parts one is side panel & second one is vertical channel which are joint by special clinching process i.e. a process which is used for joining two parts by pressing it in pneumatic pressure. Protective Film On All The Body Components: Provide all the body components like Side panels, Common side panels, Top panels, Back panels & Shelves with protective film to avoid any scratches in transportation & installation. Shelf with 10 –Folds: Shelf with 10 folds for better strength & better load bearing capacity. It is made of prime quality Pre-coated sheet of 0.8mm. Each body is with 5-compartments with 4-adjustable shelves.			
44	Movable Storage System: Single faced movable unit - 1980H X 1830WX 457D (mm.)	3(1)				
45	Movable Storage System: Double faced movable unit - 1980H X 1830W X 914D (mm.)	3(1)				

46	Channel 9 ft.	3(1)				
47	3 seater Sofa	1	Modern Leatherette 3 Seater sofa set made out of seasoned and treated solidwood internal framework, top quality foam with spring seat construction, plain cushioned seat, backrest and full squared side arms supported on solid wood or SS legs. Dimensions: 32 inch (Height) x 68 inch (width) x 29 inch (depth) ; 1 Seater : 32 inch (height) x 30 inch (width) x 29 inch (depth). The design and color of the sofa should have to be pre-approved before delivery.			
48	Single seater sofa	2				
48(a)	Comfortable Sofa Set (3+1+1)	(1)	This smart, soft and silky leatherette sofa set comes with a perfectly matched PU upholstery on the sides and back. Cozy pillowtop seating and added foam padding throughout promise ultimate comfort. These leatherette sofas are made of ultra strong wood and is built in a octangular framework that makes it a very strong and durable. Finished with special 38 density supersoft foam and the outer filling is done with original recron that gives a very special seating experience. These sofas are ergonomically designed with pub backs so you can fully sit back and relax. These sofas have distinguished PU artificial leather, fine upholstery and a finished seat height at 18 inches. Dimensions: 34 inch (Height) x 81 inch (width) x 35 inch (depth) ; 1 Seater : 34 inch (height) x 30 inch (width) x 35 inch (depth). The design and color of the sofa should have to be pre-approved before delivery.			
48(b)	Sofa set (3 seater)	(1)	Modern Leatherette 3 Seater sofa set made out of seasoned and treated solidwood internal framework, top quality foam with spring seat construction, plain cushioned seat, backrest and full squared side arms supported on solid wood or SS legs. Dimensions : 32 inch (Height) x 68 inch (width) x 29 inch (depth) ; 1 Seater : 32 inch (height) x 30 inch (width) x 29 inch (depth). The design and color of the sofa should have to be pre-approved before delivery.			
49	High back chair	(20)	High Back. P.U. arms hydraulic, tilting & Chrome finish base with fabric upholstery. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position. Colour: black			

50	Medium back Chair	63(32)	High Back. P.U. arms hydraulic, tilting & Chrome finish base with Cotton upholstery. Seat Pan Height shall be adjustable in the range of 16"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20". Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 28". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position. Colour: black			
51	4 door Book case (914mm Wx 380mm Dx 1750mm H)	11(3)	4 door book case made of Four door bookcase is a rigid knock down construction with Top panel, side panel and back panel are made of 0.7mm high yield strength CRCA, Rest in 0.8mm CRCA. Each door has 6 lever cam lock with common key, 3mm thick transparent glass for clear inside vision secured in a metal frame through rubber gasket. Each door has a scissor mechanism for receding inside the top of respective compartment & ensures parallel & smooth movement. Each door has a plastic side end caps as handle which is easy to grip. Each compartment has storage shelf which has the load capacity of 80 Kg max. 4 Door has inside metal top panel. Wherever applicable, Epoxy polyester powder coated to the thickness of 50microns.			
52	Executive Table(1650 X 750) mm., side unit & Back storage unit	2(1)	Supply of self standing executive table made out of MDF board of 25, 18 mm thick, conforming to IS 12823 of latest edition. Supply of side unit made out of MDF board of 19mm thickness with PVC edge banding, and 25mm MDF board on the top. Supplying of side unit with shelves made out of 18 mm MDF board on all sides including shutters, except back. Back shall be made out of 9 mm MDF board. It should have a PVC edge banding. The entire structure should be completed with proper hardware and fittings as necessary. Supplying of full height back storage unit with shelves made out of 18 mm prelaminated particle board on all sides including shutters, except back. Back shall be made out of 9 mm. It should have a PVC edge bending. The entire structure should be completed with proper hardware and fittings as necessary. Dimension main desk 1650W X 750D X 750H; Side Unit: 1000W X 450D X 750 H; Back Unit: 1650W X 450D X 1800H; White Board: 1200W X 600HX 18mmthk; Provision for wire management			
53	10-Seater Conference table	(2)	Supply of self standing conference table made of prelaminated particle board of 25, 18 mm thick, conforming to IS 12823 of latest edition Product. The basic tabletop should be made of 25 MM thick PLB, with 2 mm thk. PVC lipping of the same colour. Side panels to be made of 18 mm thick PLB with 2 mm thick PVC lipping of matching colour. The Modesty Panel is to be in two pieces and in two colours. : The overall dimension of the Conference Table shall be 2400 (L) x			

			1200 (D) x 750 (H). Table top : 25mm thick Pre- laminated particle board finished with 2mm edge lipping. Support : 18mm Gable End and Modesty Panel; Provision for wire management			
54	Discussion / Meeting table (4 seater)	(8)	Supply of self standing round table of 600mm dia made of 25 mm thick MDF Board, conforming to IS 12823. The basic table top should be made of 30 mm thick MDF board (Double Layer), with post formed edge, as per approved design and colour. The table top shall be supported on two right angled intersecting rectangular cross legs made out of 25 mm thk medium density fibre board. Provision for wire management			
55	Fixed type educational training chair	(140)	Fixed type educational training chair with full desklet (made out of 18mm pre-laminated MDF board) as per specifications. Seat/ Back: The seat and back shall be made of 12mm thick hot pressed plywood. Upholstered with fabric (as per approved color) and moulded polyurethane foam together with PVC lipping all around. The back foam to be designed with contoured lumbar support for extra comfort. Back Size : 490mm W x 470mm H, Seat Size 490 mm W x 440 mm D . Polyurethane foam: Moulded with density 45 +/- 2 Kg/m3 and hardness 20 +/- 2 Kg. on Hampden Machine at 25% compression. The armrests are fitted to the seat with seat/ armrest connecting strip assembly made of 0.5 cm thick HR steel . The tubular frame shall be powder coated cantilever type and made of 25mm. Powder Coating:Dry film thickness more than 45 microns. The chair should have a MS powder coated wire mesh rectangular tray under the seat and fixed to the frame.			
56	Self Standing Table with pedestal (1800 X 900 X 750)mm.	1	Self Standing Table fabricated out of 25 mm thick Plain Particle Board interior grade conforming to IS 12823 : 1990 and the top with laminate of thickness 0.7 mm as per IS 12823 : 1990 of approved brand All components like tops, sides etc. are finished with machine pressed 2mm thick PVC EDGE binding tape glued with hot melt EVA glue. Supply of pedestal storage unit (27"high x 14"wide x 18"depth) made out of prelaminate particle board of 19mm thickness with PVC edge banding, and 25mm thick post formed board on the top. The unit will have two pencil drawer and one filing drawer fixed with drawer chanel and with central locking system. 2D+1F			

57	Mesh High back chair	(1)	High back Executive chair with head rest synchronized tilting mechanism with Multiple locking systems, ABS for seat, Mesh back with extra lumbar Support with fine tuning for depth adjustment, with swivel & depth Adjustable arm pad & option of PVC padding, gas lift for height adjustment, Standard 5-prong P base with castors. Seat Pan Height shall be adjustable in the range of 18"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20" Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			
58	Fixed Visitor Chair	(9)	The seat is made of plywood with seat & back cotton upholstery. The back is made up of two piece injection moulded frame. The inner frame is made upholstered with mesh fabric and mounted on the main assembly. Sub assembly seat size: 527mm Wx 540mm H, Leg frame assembly is the sled base welded assembly made, from MS round tube with base plate for seat fixing. Full dimension of the seat is Width 550mm, Depth 655mm, Height 980mm.			
59	Coffee Table: size is 1200mm (W)x600mm (D)x 450mm (H)	1	Coffee table top made of toughened glass. The top of the table is of 12 mm thick and have a higher load bearing capacity than glass top. Table under structure is made of PVC lamination. with ethnic design (effectively fits with any decor) and Load bearing capacity of 50 Kg. Size of the Table is 1200x 600x 450mm.			
60	Coffee table: size is 1000mm (W)x600mm (D)x 450mm (H)	2(1)	Coffee table with PU painted strip on Glass. Table under structure is made of PVC lamination. Table having tempered glass. Table size is 1000 mm (W) x 600 mm (D) x 450 mm (H). Table top should be of tempered glass, MDF understructure with PVC covering, PU paint strip on glass top with silver powder, Glass top attached to the understructure via UV disc and Load bearing capacity of 30 Kg. Tempered glass has greater load bearing capacity.			
61	--	--	--	--	--	--
62	--	--		--	--	--

63	Self Standing Table with metal leg(1200 X 600)mm. & pedestal	4	Two seater self standing student table with top fabricated out of 25 mm thick Plain Particle Board interior grade conforming to IS 12823 : 1990 and the top with laminate of thickness 0.7 mm as per IS 12823 : 1990 of approved brand All components like tops, sides etc. are finished with machine pressed 2mm thick PVC EDGE binding tape glued with hot melt EVA glue. Legs to be made from 1.6mm Matt silver Anodized Aluminium extrusion. Legs assembled together with 8mmthick MS powder coated plate at bottom and 5mm thick MS powder coated plate at top, The Base support plate should have provision for wire entry and glide fixing, The wire carrying to be facilitated through the hollow space between two leg extrusions and the wires to be concealed between removable rigid PVC extrusion in the leg & a provision for max. 20 nos. of Dia 6 wires to be passed through the space between two leg extrusions. Table Support brackets to be powder coated support brackets made from 2mm thick MS sheet provided for overall product stability. Powder coated stopper to be made from 1.5mm thick Aluminium extrusion fixed with work-surface by powder coated stopper bracket made from 3mm thick MS sheet. Pedestal storage unit: Providing and positioning of pedestal storage unit (27"high x 14"wide x 18"depth) made out of MDF of 19mm thickness with PVC edge banding, and 25mm thick post formed board on the top. The unit will have two pencil drawer and one filing drawer fixed with drawer chanel and with central locking system. 2D+1F.			
64	Mesh high back Chair	3	High back Executive chair with head rest synchronized tilting mechanism with Multiple locking systems, ABS for seat, Mesh back with extra lumber Support with fine tuning for depth adjustment, with swivel & depth Adjustable arm pad & option of PVC padding, gas lift for height adjustment,Standard 5-prong P base with castors. Seat Pan Height shall be adjustable in the range of 18"- 21". Seat Pan Depth shall be in the range of 15"-18" with a waterfall sloping front edge. Seat Pan Width shall be in the range of 18"-20" Seat Pan Angle shall be adjustable in the range of 0-10 degrees. Seat Back Height shall be minimum 30". Back Width shall be minimum 18". Seat Back Tilt shall be adjustable in the range of 0-15 degrees. Padding shall be provided on seat pan, backrest and armrests. Lumbar Support shall be in the range of 1.2"- 2" placed in the lumbar region of the back. Armrests shall be adjustable up and down (7"- 11' minimum) and in and out (arm rest separation range 18"- 22"). Base shall have 5 castors minimum. It shall be possible to make all the adjustments from the seated position.			

65	Self Standing Table with metallic leg & pedestal (1650 X 900 X 750)mm.	16	Self Standing table made of 25mm thk. Pre Laminated Particle Board (Only top). All work surface edges to be duly sealed with 2mm thick PVC Edgebanding. Understructure - Modesty Panel to be made of 18mm thk. Pre Laminated Particle Board . All work surface edges to be duly sealed with 2mm thick PVC Edgebanding. Rectangular Frame to be made of fabricated component in 1.2mm thick CRCA. Finish: Powder coat (Epoxy polyester). Legs to be made of fabricated component in 38mmx25mmx1.2mm thick MS Tube Finish: Powder coat (Epoxy polyester). Table to have provision for hanging the CPU & the CPU Modesty to made of 0.8mm thick CRCA (IS:513), Finish: Powder coat (Epoxy polyester). Pedestal storage unit: Providing and positioning of pedestal storage unit (27"high x 14"wide x 18"depth) made out of MDF of 19mm thickness with PVC edge banding, and 25mm thick post formed board on the top. The unit will have two pencil drawer and one filing drawer fixed with drawer chanel and with central locking system. 2D+1F.			
66	Curtains with Curtain Rods and Fixtures	Exact quantity determination during site visit	Venetian blinds of approved style and design including fittings in five rooms; Cotton / Polycotton Curtains of approved prints, style, design, and texture in other places. Length of Curtain Rods = 200 meters Area of Curtains = 600 square meters			
67	Stackable Cafeteria Chair	(150)	Stackable Cafeteria Chair without arms supported on metal pipe frame chrome plated giving a great finish. Plastic moulded seat in Green/Red/Yellow/Orange/Blue colors.Backrest: Plastic moulded back with colour same as seat. Four leg SS / metal powder coated tubular frame. Dia : 19mm , Thickness : 1.6mm Finish: SS / MS powder coated. Light weight, very convenient and easy to use.			
68	Slotted Angle Rack	5	Slotted Angle is the most versatile, time and cost effective construction material available for building carts, ladders, benches, shelving, cases, racks or any other type of structure. Made of 12 gauge roll-formed steel. Slotted Angle is finished in Gray Enamel Paint or Corrosion Resistant Powder Coating Finish. The shelves shall be adjustable to required height. There can be total of six shelves in a single rack. The shelves shall be fixed to the frame using SS nuts/bolts for easy dismantling and height adjustments. Shelf Size: 900 X 600 mm. / Load Capacity : 80-140 Kgs. Overall size of a single rack shall be 900mm. X 600mm. X 2000mm.			
69	1' x 2' Mirrors	(4)	Plain Mirrors (Designer) of Approximate Dimensions 1' x 2'			

PASSIVE CABLING AND NETWORKING RELATED (Bidders must ignore Item No. 2)						
1.	Network Cabling		Horizontal UTP Cabling for approx. 500 nodes dual port across 3 floors			
1 (a)	Cat6 UTP Cable, Blue	100	- Compliant to TIA / EIA 568-C.2 Category 6 cable specifications - Central X-shaped polymer spine maintaining 4 pairs separation. - CM rated cable - Conductor: Solid Bare Copper - AWG: 23 - Insulation: PE - Filler: PE - Jacket: Fire Retardant PVC - UL listed			
1 (b)	Cat6 Patch Cord, 1 Mt., Green	500	- Pre-terminated with RJ45 plugs and Slim clear anti-snag slip on boots - LS0H sheath - RoHS Compliant - Conductor size: 24 AWG stranded copper wire - Operating temperature range: -20°C to 60°C - RJ45 plug and boot material: Clear polycarbonate - Contact material: 0.35mm thick copper alloy - Contact plating: Selective gold - RJ45 plug dimensions compliant with: ISO/IEC 60603-7-4 and FCC 47 Part 68			
1 (c)	Cat6 Patch Cord, 2 Mts., Green	500	- Pre-terminated with RJ45 plugs and Slim clear anti-snag slip on boots - LS0H sheath - RoHS Compliant - Conductor size: 24 AWG stranded copper wire - Operating temperature range: -20°C to 60°C - RJ45 plug and boot material: Clear polycarbonate - Contact material: 0.35mm thick copper alloy - Contact plating: Selective gold - RJ45 plug dimensions compliant with: ISO/IEC 60603-7-4 and FCC 47 Part 68			
1 (d)	24 Port unloaded modular Jack Panel	42	- Constructed of cold rolled steel with Graphite Grey powder coated finish. - Universal front labelling system easy to use and change. - To be loaded with 1 to 24 modules allowing for easy maintenance if jacks have to be removed or replaced.			
1 (e)	Cat6 UTP Jack, White	2000	- Spring-Loaded Shutter - IDC V-shaped contacts that flex not fatigue when terminated			

			- Jack Connector : Plastic Housing: Polycarbonate, UL94V-0 rated or equivalent - Contact Material: Copper Alloy - Contact Plating: 50µ Gold / 100µ Nickel - Contact Force: 100g minimum - Wire Accommodation: 22-24 AWG solid - TIA/EIA-568-C.2 Component Compliant - FCC Subpart F 68.5 Compliant - IEC-603-7 Compliant - ISO 11801 Class E Compliant - ETL Verified for Category 6 Component Compliance - UL listed			
1 (f)	Dual shuttered Face Plate	500	- Protected labelling facility - Icon Port Identification labeling - Material: VE10 ABS			
2.	--	--	--	--	--	--
3.	Network Cabling		Racks for 3 floors			
3 (a)	12U, Wall Mount Rack with all accessories	As per site req	12U, Wall Mount Rack with all accessories			
3 (b)	42U Rack	4	42U (600 x 1000 mm) Rack with vertical cable channels, 6 horizontal cable manager, two vertical power manager Castor wheel, Fan, 4 pkt of Hardware Front Panel and other accessories			
4.	Network Cabling : Cable Trays	As per site req 600mm width (50 metres) 300mm width (100 metres) 150mm width (200 metres)	BIS/ISI marked Perforated cable trays of make approved by CCC for laying electrical and data cables. The trays shall have to be fixed on mounting brackets on the floor or suspended from the ceiling, as per site requirement and approval of the client. The cable tray height shall be 50 or 75 mm. Tray widths shall be 50, 100, 150, 300, 450 & 600 mm and shall be installed as per site requirement. Cable trays shall either be hot-dipped galvanized or powder coated, as per standards. The cable tray system should include all mounting & fixing accessories, e.g. vertical / horizontal bends, inside / outside bends, reducers, etc. The trays shall have to be pre-painted in order to distinguish between a power and network. The bidder has to submit a detailed cable tray layout along with the bid. Cable tray Sheet thickness = 1.2 - 1.5 mm; Height = 50-75mm			
5.	Network Cabling : PVC Conduit	600 metres	- PVC Conduit : 20 ~ 25 mm - Adaptable to standard concealed wiring system as per IS: & BS - Unplasticised PVC Formulation to Improve the mechanical strength - UV stabilised - Color : Ivory - Tensile Strength - 390-420 Kg./cm2			

			- Dielectrical Strength = 36 Ky/mm - Electric Strength = No breakdown at 2 Kv x 50 hz. For 15 minutes - Working Temp. = 70°C - Flammability = UL94V-0 - As per IS:9537 part-III - 1983 standards			
6.	Network Cabling : PVC Trunking	As per site req 2000 metres	Snap-on columns and DLP U-PVC/aluminium/snap-on trunking system for power and data distribution, as per site requirement.			
7.	Network Cabling : Junction Box	50	Floor boxes/groumets/ desktop extensions/ pop-up boxes for cable junction/termination, as per site requirement.			
7 (a)	Network Cabling : Consolidation Box	4	Consolidation Boxes, (2U+2U) for termination of network cables.			
7 (b)	Raised Access Flooring	20	Raised Access Flooring (in Sqmt), using steel panel having a cemetitious core, HPL (1.5 ~ 2.0 mm) pre-fixed, PVC beads with edge support rigid grid understructure system. Access floor system to be installed shall provide a maximum finished floor height of 450 mm from the existing floor level. The system shall provide for suitable floor tiles, pedestals and stringers designed to withstand a minimum UDL of 500 Kgs / Sqmt. The system should be provided with all tools and tackles to move the tiles from one place t another. Gaps between the wall / partition and raised floor, if any, should be suitably blocked. The installation of the system would include any tile cutting, as may be required as per site conditions.			
8.	Network Cabling : Installation Services	1	This would include fixing of conduits and cable trays, laying of UTP cable through cable trays / conduits, as applicable, termination of jack panel, termination of I/O, fixing of consolidation boxes, installation of raised access floor system and installation of racks.			
ELECTRICAL CABLING RELATED						
1.	Electrical cabling	3000 metres	Flexible Cu cable, 3 x 2.5 sq. mm.; rodent and fire resistant; BIS/ISI marked; make approved by CCC			
2.	Electrical cabling	500 nos.	Modular Power Sockets and Switches with back boxes / face plate; BIS/ISI marked; make approved by CCC			
3.	Electrical cabling	12 nos.	Power Distribution Boards (PDB); BIS/ISI marked; make approved by CCC			
RODENT REPELLANT SYSTEM FOR THE INSTALLED CABLING						

1.	Rodent Repellent System	96	Rodent Repellent System: Rodent Repellent System shall be provided to protect the premises against any rodent infestation, the technical specification of Rodent Repellent System are as given below: (a) General Objective: The objective is to protect the entire premises against rodents. The purpose is to keep the rodents away from the floor by generating very high frequency sound waves (above 20 KHz) which are not audible to human ear but irritates rodents. The objective is to protect all the cables below floor, above ceiling & room void from damage caused by rodents. (b) Scope: The system proposed should protect all the ICT equipments with relevant type of high frequency sound producing device called satellites or transducers. The number of transducers should ensure that the premises are rodent free.			
2.	Rodent Repellent System	8	Rodent Repellent System: Ultrasound Satellites: e. The satellites or transducers shall be circular ceiling mounted low profile units that produce high decibel sound waves at very high frequency not less than 20 KHz. f. These satellites shall cover an area not less than 400 Sq.ft for Room void application, for ceiling g. Voids & floor void applications. h. No looping is permitted while connecting the satellites to the main controller. i. Every satellite connected to the controller shall have a dedicated connection with the controller.			
3.	Rodent Repellent System	8	Rodent Repellent System: Controller Features: f. The controller shall support 12 Transducers and shall come with a pair of stands and brackets. g. The controller is installed in the control / BMS room and the transducers in the problematic areas i.e. above and below false ceiling and below false flooring. h. 2500 Sq. Feet of Area Coverage per system/ Controller i. Shall drive up to 12 Transducers. With minimum @ 250sft coverage each j. LCD display with on-board controls for changing parameters			
4.	Rodent Repellent System	1	Rodent Repellent System: Mounting Rack			
5.	Rodent Repellent System	1 Lot	Installation Services			

TECHNICAL SPECIFICATIONS FOR ELECTRONIC FURNISHING ITEMS

Sn	Technical Specifications	Compliance (Yes / No)	Deviations, if any	Remarks
1	Audio System for Classrooms			
1.1	Power Amplifiers			
	250 watts amplifier with AC & 24V DC Operation			
	Preamplifier and Line Output for connecting to a booster amplifier and for recording the programme.			
	Resettable circuit breaker for protection against overload and short circuit.			
	Instant transfer to DC power if AC power fails.			
1.2	Gooseneck Microphone			
	Unidirectional Dynamic Microphones			
	Wide frequency response.			
	High front-to-back rejection for more gain before feedback.			
	Built-in XLR socket.			
1.3	Omni directional Microphone			
	- Microphone can be clipped on to a tie or the collar. - Electret condenser lavalier type microphone. - Wide angle pick-up for lectures. - Powered by a single pencil cell. - Cable length along with the microphone should be six (06) meters or more.			
1.4	Wall mount column speakers			
	Input Power : 20W RMS, 30W Max			
	Impedance/Voltage : 16Ω, 100V			
	Frequency Response : 150-10,000Hz			
	Speaker connections through a terminal strip at the rear.			
1.5	Wall mount rack			
1.5.1	6U Wall Mount Rack			
1.5.2	Top and Bottom covers: Multi-bend one piece construction for accentuating cantilever stress. Design incorporates a 45mm cavity which is used to accommodate exhaust at the top and cable length at the bottom . Top and bottom covers are ventilated on all sides for assisting natural air flow.			
1.5.3	Cable entry provision: Is provided by 35mm round knock outs in the top and bottom covers which are edge protected by rubber grommets to prevent cable damage.			
1.5.4	Side panels : Side panels are provided with hinges and slam latches for easy access of the equipments from the sides. Side access ensures proper reach to the accessories mounted on the rear 19" panel mounts.			
1.5.5	Vertical member : A set of 4 vertical pillars (multibend design) with a gusset welded to close the ends at the top and bottom to ensure high lateral stability under cantilever load condition.			
1.5.6	Front toughened glass door : Ventilated metal trims with a toughened tinted glass pasted permanently. Ventilation provided on the trims to avoid creation of heat pockets between the equipment face and the glass door.			
1.5.7	19" panel mounts : L- Angle construction with 9.5mmx9.5mm square shots provided in 1U pitch pattern to hold standard cage-nuts. Mounting Dimensions to IEC-297-3 for all electronic equipment.			
1.6	Portable Wireless LCD Projector			
	Brightness : 4500 lm			
	Diagonal Screen Size : 0.76–7.62 m (30–300 in), 4:3 aspect ratio			

	• Technology : LCD			
	• Resolution : 1024 × 768			
	• Power Consumption : 100–240 V: 320 W			
	• HDMI & LAN Port : Yes			
	• USB Ports : Two			
	• Built-In Speaker : Yes			
	• Wireless Standard : 2.4 GHz: IEEE802.11b/g/n, 5 GHz: IEEE802.11a/n			
	• Managed Meeting Mode : Up to 10 users can connect and take turns presenting for easy collaboration.			
	• Mounting : Ceiling mount accessories included.			
	• Type : Portable			
1.7	Interactive / Electronic Whiteboard			
	View, Save and Share - All in Color			
	• External Dimensions (H x W x D, without stand) : 44.3 in. x 78.6 in. x 8.8 in. (1,125 mm x 1,998 mm x 224 mm)			
	• Power Supply : AC 100 - 120 V / AC 220 - 240 V, 50/60 Hz			
	• Power Consumption : 0.7 A / 0.23 A (Operational / Standby)			
	• Operating Environment : Temperature: 50 – 95°F (10 – 35°C), Humidity: 30 – 80 % RH			
	• Panel Dimensions (H x W) : 33.0 in. x 68.5 in (838 mm x 1,740 mm)			
	• Number of Sheets : 2 (endless type)			
	• Copying Area (H x W) : 31.1 in. x 67.7 in. (790 mm x 1,722 mm)			
	• Time Required for Scanning : Color – approx. 30 sec/sheet ; B/W – approx 20 Sec/sheet			
	• Store File Format : Color Scanning: PDF or JPEG Black and White Scanning: PDF or JPEG			
	• Supported Memory Type : SD Card / USB Flash Memory			
	• Printer Interface : USB 2.0 (Full Speed, USB Slave, B-Type Connector)			
	• PC Interface : USB 2.0 Full Speed or USB 1.1			
	The Interactive / Electronic whiteboard has to be supplied with stand, replacement film, color markers, eraser, including all accessories.			
2	Public Address system			
2.1	MP3 player for the Existing Public Address System			
3.	Water Coolers with complete RO system			
A.	ISI marked			
B.	Blue fins on condenser coil			
C.	Rugged stainless steel/ galvanized steel body			
D.	Compressor : Reciprocating			
E.	Cooling Capacity (Ltr /hr) : 150			
F.	Number of Faucets : 2			
G.	Rated current (amp) : 7.5			
H.	Refrigerant : R-22			
I.	Total storage capacity (Lt) : 150			
J.	The water cooler has to be supplied with a complete RO system comprising of RO, UV, UF etc. to be fitted at the water source			
4.	Refrigerator			
A.	2-Door			

B.	Gross Capacity(L) : 480			
C.	UI Intellisensor : Yes			
D.	RC Lamp : LED			
E.	Number of Shelves : Three (03)			
F.	Microblock : Yes			
G.	Width (mm) : 700 Depth (mm) : Less than 750 Height (mm) : Less than 1850			
5	Microwave Oven			
A.	Type : Convection, OTG			
B.	Color : White			
C.	Capacity : 45 Litres			
D.	Control type : Mechanical knob			
E.	Timer : Yes			
F.	Power consumption : 1200 watts			
G.	Voltage : 240 V			
H.	Includes Baking Tray, Grill Rack, Tong, Crumb Tray, Skew Rods			
I.	To be supplied with cookware set, comprising of 3 pcs set of cookware having 3 layered non-stick coating.			
6	Induction Cooker			
A.	Width : 300 – 350 mm			
B.	Height : Less than 100 mm			
C.	Number of preset menus : 7			
D.	Fast heating : Yes			
E.	Digital display : Yes			
F.	Automatic shut-off : Yes			
G.	Cool Touch : Yes			
H.	Timer : Yes			
I.	Visible & Audible Alarm Signals : Yes			
J.	Power Input : 220 – 240 V			
K.	Power Consumption : 1800 W			
L.	To be supplied with cookware set, comprising of 3 pcs set of cookware having 3 layered non-stick coating.			
7	Coffee Vending Machine			
A.	Number of Selections : Minimum Three (3), Tea, Coffee & Soup			
B.	Premix Capacity (each lane) : 1 Kg			
C.	Dispensing Rate (cups/min) : 6 -7 cups			
D.	Max. Load : 2.2 Kw			
E.	Power Supply : 230 v AC 15 Amp			
F.	Auto Cleaning : Yes			
G.	Machine Body : 1.2mm, M S			
H.	Boiler : Stainless Steel 304 Grade			
I.	Digital Counters : Yes			
8	IP based Surveillance System			
A	The surveillance cameras shall cover all the three floors of the building including classrooms and supporting rooms. Surveillance system shall include cameras, video management software. The storage shall be sized to keep all the cameras online for 30 days. The technical specification of surveillance system is given below:			

B	The IP based Closed Circuit Camera surveillance system shall use state of the art technology.				
C	All the cameras proposed shall have Power over Ethernet				
D	The system shall support open architecture and shall not have any proprietary equipment to ensure future compatibility with third party systems				
E	The scope shall include supply, installation, testing, commissioning and maintenance of the IP based CCTV system proposed.				
F	Scope shall include supply , installation , testing and commissioning of cameras, managed network switches / network video recorders/severs, Video Management Software (DVMS) workstations, monitors, racks, consoles cables, etc. UPS power shall be provided by NIT.				
	The specifications for these components shall be as mentioned below.				
G	The cameras shall be located in all labs, classrooms and corridors except staff rooms.				
8.1	2 MP IP IR DOME CAMERA				
	Image Sensor: 1/2.7" Progressive CMOS or better				
	Maximum Resolution: 1920x1080 (2MP)				
	Lens Type: Vari-focal				
	Focal Length: f = 2.8 ~ 12 mm or better				
	Aperture: F1.8 ~ F2.85				
	Auto-iris: P-iris				
Field of View		34° ~ 112° (Horizontal)			
		19° ~ 59° (Vertical)			
		39° ~ 133° (Diagonal)			
	Shutter Time: 1/5 sec. to 1/25,000 sec. or better				
	Day/Night: Removable IR-cut filter for day & night function				
Minimum Illumination		0.22 Lux @ F1.8 (Color)			
		0.1 Lux @ F1.8 (B/W)			
Pan/tilt/zoom Functionalities		ePTZ:			
		48x digital zoom (4x on IE plug-in, 12x built in)			
IR Illuminators		Built-in IR illuminators, effective up to 25 meters with Smart IR or better			
		IR LED*8			
On-board Storage		Slot type: MicroSD/SDHC/SDXC card slot			
		Seamless Recording			
	Video Compression: H.264 & MJPEG				
Maximum Frame Rate		30 fps @ 1920x1080			
		In both compression modes			
	Maximum Streams: 4 simultaneous streams or better				
	S/N Ratio: 60dB or better				

	Dynamic Range: 100dB or better				
	Video Streaming: Adjustable resolution, quality and bitrate, Smart Stream				
	Image Settings: Adjustable image size, quality and bit rate; Time stamp, text overlay, flip & mirror; Configurable brightness, contrast, saturation, sharpness, white balance, exposure control, gain, backlight compensation, privacy masks; Scheduled profile settings, 3D noise reduction, video rotation, defog				
	Audio				
	Audio Capability: Two-way Audio (full duplex)				
	Compression: G.711, G.726				
	Interface	Built-in Microphone			
		External line input			
		External line output			
	Network				
	Users: Live viewing for up to 10 clients				
	Protocols: IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, SSL, TLS				
	Interface: 10 Base-T/100 BaseTX Ethernet (RJ-45)				
	ONVIF: Supported				
	Intelligent Video				
	Video Motion Detection: Five-window video motion detection				
	Alarm and Event				
	Alarm Triggers: Motion detection, manual trigger, digital input, periodical trigger, system boot, recording notification, camera tampering detection, audio detection				
	Alarm Events	Event notification using digital output, HTTP, SMTP, FTP, NAS server and SD Card			
		File upload via HTTP, SMTP, FTP, NAS server and SD card			
	General				
	Smart Focus System: Remote Focus				
	Connectors	RJ-45 cable connector for Network/PoE connection			
		Audio input			
		Audio output			
		DC 12V power input			
		Digital input*1			
		Digital output*1			
	LED Indicator: System power and status indicator				
	Power Input	DC 12V			
		IEEE 802.3af/at PoE Class 0			

	Power Consumption: Max. 13 W			
	Safety Certifications: CE, LVD, FCC Class B, VCCI, C-Tick, UL			
	Operating Temperature	Starting Temperature: 0°C ~ 50°C (32°F~ 122°F) Working Temperature: -10°C ~ 50°C (14°F~ 122°F)		
	Warranty	3 years		
8.2	NETWORK ATTACHED STORAGE WITH 50TB HDD			
	Storage Controller	The storage system shall have a dual controller configuration running in an active-active mode with automatic failover capabilities in case of one controller failure. It should support NAS and SAN Simultaneously with out NAS Gateway. The storage system shall not be a re-branded or re-chirstened make of another OEM. Brand and model of only the original principal owner of the technology can be offered.		
	Controller Cache Requirements	The system should be provided with 48 GB cache across the two controllers (24 GB per controller). It should have the ability to protect data on cache. Cache should be mirrored and battery / Super capacitors backed. Cache backup should be at least 72 hours.		
	Raid Level Support	The Storage system should support RAID Levels 0, 1, 5, 50, 6, 10.		
	Host Interface Protocols	Storage should support FC, iSCSI, SAS, FCoE, NFS & CIFS Protocols		
	Host Interface Ports	The Storage system should be provided with 4 x 10 Gbps Base-T for iSCSI & 8 x 1 Gbps Base-T for NAS ports across the controllers .		
	Drive Technology Support	The storage system should support 2.5" & 3.5" SAS, SATA HDD & SSD. The storage system should have support for 12 Gbit/s SAS drives.		
	Storage Scalability	The storage system should be scalable to 250 drives or higher. Atleast two nos of 12 Gbps backend ports for attaching disk expansion enclosures. Proposed storage should support data in place upgrade to highest storage model in same family. No data migration shall be required when upgrading to next model		
	Storage Capacity	The storage system should be offered with 11 x 8 TB 7.2K rpm NL-SAS HDD		
	Storage Features	The storage support creation logical volumes without physical capacity being available (Thin Provisioned) or in other words system should allow over-provisioning of the capacity. This feature should be made available for the maximum supported capacity. Proposed storage should support multiple full copies of		

		production data for recovery, testing, backup, or report generation.			
		Proposed storage should support point-in-time snapshot Licenses should be provided with maximum supported storage capacity			
		The proposed storage should support automated Quality of Service feature for SAN where admin can specify the response of each LUN and storage will automatically adjust the parameters to achieve the response			
		The storage system should provide support for host multipathing drivers			
	NAS Features	Proposed storage should integrated with Domain Controller and LDAP			
		Proposed storage should support Quota Management based on users			
	Performance Benchmark:	The proposed storage should be listed in SPC-1 Benchmark results with 2,00,000 IOPS. SPC-1 results Benchmark Results should be submitted at time of bidding			
	Management	Easy to use GUI based and web enabled administration interface for configuration, storage management.			
		Storage management software must be intuitive, browser-based user interface that configures and manages SAN and NAS environment using single GUI			
		Storage should be provided with System management tools Web GUI, CLI, SNMP, SMI-S, IPV6, Email notification, wake on LAN			
		Should offer real time performance monitoring tools giving information on CPU utilization, volume throughput, I/O rate and latency.			
		Storage management software must be able to manage access controls, user accounts and permission roles			
	AC Power	100-240 V AC, 50-60 Hz			
	OS Support	Support for industry-leading operating system platforms including: HP-UX, IBM-AIX, Microsoft Windows, LINUX, SUN Solaris, Vmware.			
	Built in Redundancy	The System shall support fully Redundant & Hot Swappable Fans & Power Supplies. There shall be support for Non Disruptive Microcode Update & Non Disruptive Parts Replacement.			
	Rack Mountable	2U Rack form factor with rail kits for 19" rack mount			
	Warranty	3 years OEM ONSITE warranty NBD resolution			
8.3	OPEN PLATFORM VIDEO MANAGEMENT SOFTWARE INCLUDING 45 NOS. OF CAMERA CONNECTION LICENSE				

	The VMS should be Open architecture to support Windows, Linux and Mac OS. Server should be on Linux and client on windows OS.			
	The VMS should support remote access for Live viewing and archive search using any standard Browsers, eg Firefox, Chrome, Safari, Internet Explorer.			
	OS-independent, in-built user privilege management with multiple user category (not limited to Windows-dependent active directory framework).			
	Software OEM should have development centre in India for any customization required.			
	The VMS should support open source DBMS, eg, PostgreSQL, MySQL besides MS SQL, Oracle 10G. Only SQL Server based system will not be accepted.			
	Should support minimum 5 numbers of simultaneous connected users.			
	The VMS should record and monitor up to 64 cameras.			
	The VMS must support local H.D.D and NAS/SAN storage for recording.			
	The VMS must support In-built Video Analytics applications like Detecting Activity and presence of people.			
	The VMS must have pre-integrated framework of Video Analytics.			
	The VMS shall send SMS for alarm alerts over cellular network.			
	The VMS shall send Emails for alerts.			
	The VMS shall have Alert handler and event escalation.			
	The VMS must allow operator triggered events.			
	The VMS client should support e-Map.			
	The VMS client should support multilayer site map.			
	The VMS client should support Multi-cast and multi-stream.			
	The VMS should support Live view and instant playback on mobile phone client.			
	The VMS should support web client for remote monitoring.			
	The VMS should support Mobile client for remote viewing.			
	The VMS client should have favourite layout bookmarks.			
	The VMS client should support In situ PTZ controller.			
	The VMS client should support single video simultaneous live and replay.			
	The VMS client should support Two-way audio communication.			
	The VMS client should have integrated archive search and player.			
	The VMS client must have encryption option while exporting an video.			
	The VMS should support Video watermarking as standard feature.			
	The VMS should support critical video bookmarking and retention.			

	The VMS should have failover with redundant server feature.			
	The VMS client should have machine locking for operator clients.			
	The VMS must have video cart in archive download.			
	The VMS client should have magnifying glass for ROI magnification.			
	The VMS must have option to integration with Automated License Plate Recognition, Stop Light Violation Detection, Electronic Challan system.			
	The VMS shall support any ONVIF camera.			
	VMS shall be open to any IP and Analog cameras integration. It should support both Windows and Linux operating system on Server machine. It should support Windows, Linux, and Mac OS on Client machine, independent of what operating system is there in the servers. Only Windows OS based system will not be acceptable.			
	In that respect of openness the VMS shall already support IP cameras from at least (13) major vendors. Bidders shall clearly list in their proposal the brands and models already integrated into VMS. As such it is mandatory for VMS to have ONVIF compliant.			
	The software OEM should have its own development and/or customization centre in India, so that customization as per user requirement can be done as and when required.			
	The VMS shall already support Storage system from at least three major vendors and bidders shall clearly list in their proposed brands and models already supported into VMS.			
	VMS shall allow managing initial client logon, system configurations, logging, remote administration of recording servers, devices, security, rules, alerts and logging.			
	VMS shall store the system's configuration in a relational database. The user shall have the option to choose Open source free DBMS like PostgreSQL, MySQL, etc.			
	VMS shall support at least 5 levels of users with various privileges to access the system functionality. Each category of users shall have selectable rights to perform various operations like Camera add/delete, Change camera settings, Configure storage, Control PTZ cameras, User management, etc.			
	The System health status like Server failure, Camera disconnection, Storage full, etc shall always be displayed at the top panel in Client UI.			
	VMS shall maintain a continuous log of server status messages, Camera connectivity, Storage status, Recording ON/OFF, User activity logs, etc which shall be accessed from the Workstations using different filters.			
	VMS shall be able to detect IP devices automatically.			
	VMS shall support H.264 and MJPEG stream for both live view and Recording independently. Compression rate shall be manageable.			
	VMS shall manage, display and record at least 3 multiple H.264 video streams from a single IP camera or encoder (SUBJECT TO CAMERA SUPPORTING SUCH FEATURE).			
	Each video streams shall be individually and independently configurable in term of resolution, frames and bandwidth.			
	VMS shall support at least CIF, 2CIF, 4CIF/D1 and HD/Megapixel resolution.			
	VMS shall support video streams up to at least 50/60fps per camera.			
	NAT Firewall Support:- The system shall support port forwarding, which shall allow clients from outside of a Network Address Translation (NAT) firewall to connect to the system without using a VPN.			
	VMS shall allow camera clustering based on Locations as well as Groups independently.			
	Each operator shall be able to monitor one or several clusters of cameras.			

	It shall be possible to apply the common parameters to several/all cameras of the same cluster through a unique settings session.			
	Parameter settings shall be adjusted based on camera manufacturer contextual menu.			
	The system log shall be searchable by Level, Source and Event Type.			
	VMS shall provide feature-rich administration client for system configuration and day-to-day administration of the system.			
	The Client Viewer shall provide a Graphical User Interface (GUI) for the convenient access of live and recorded video as well as camera properties and display quality.			
	The Client Viewer shall support real time simultaneously view of 1, 2x2, 3x3, 4x4, 1+5, 1+7, 1+11 and 8x8 multi-screens video display and a simple click shall allow enlarging any of the multi-screen displays into a full screen display. On clicking again on the enlarged display, multi-screen display shall reappear.			
	It shall be possible to drag and drop cameras from the camera directory to the display screen.			
	The Client Viewer shall offer the capability of browsing recordings from cameras on the same panel where other cameras are displayed live. There shall be provision to replay multiple such cameras from various timestamps, independent to one another.			
	Digital zooming shall be possible both on live view as well as on Replay view on Fixed as well as PTZ Cameras.			
	VMS shall select the appropriate video stream from camera for display depending on the display resolution to optimize the network bandwidth.			
	The Client Viewer shall support the use of standard PTZ controller or 3-axis USB joysticks for control of pan, tilt, zoom and auxiliary camera functions.			
	The Client viewer shall show on-screen floating PTZ buttons when mouse is placed on a PTZ Camera live view panel. On screen adjustment of PTZ speed shall also be there so that the speed can be adjusted independently for each camera.			
	The Client Viewer shall support the use of keyboard shortcuts for control of standard features.			
	The Client Viewer shall allow an operator to play live audio from a camera's microphone and play back recorded audio.			
	The Client Viewer shall allow an operator to export audio together with video in the AVI format.			
	The operator shall have a "press to talk" option which shall send the microphone input from the operator out to camera attached speaker.			
	Use sound notifications for attracting attention to detected motion or events.			
	Export recording (e.g. for use as evidence) in AVI or JPEG formats.			
	The operator shall have the ability to use digital zoom where the zooming is performed in the image only on any number of cameras simultaneously. This functionality shall be the default for fixed cameras. The use of digital zoom shall not affect recording or other users.			
	The Client viewer shall allow switching amongst multiple selected bookmarked display layouts with pre-determined time duration for each matrix view.			
	The Client Viewer shall display a time line for each camera to represent recorded video sequences. The Client Viewer shall indicate whether the video was recorded due to motion activation, or recorded without motion or pre and post alarm video. The time line band shall be highlighted based on the camera view selected in the display.			
	The Client Viewer shall allow the start and stop time and camera source for the export to be set and provide two format options for exporting video clips. The exported clip shall be the native H.264 format from the camera.			

	VMS shall provide options for export format type (AVI/JPEG), timestamp, frame rate (full/half), digital zoom export, and AVI CODEC. Video clip may be exported to desktop/CD/DVD or a specific file path. All audio associated with the video being exported shall automatically be included in the AVI export.			
	VMS shall watermark each and every frame of the Video files with Watermarks to authenticate the source of the video. While exporting video segments to external media (CD/DVD) or to any folder in workstations, the VMS shall allow encryption of the video files with at least 128 bit encryption technique.			
	The Client Viewer shall allow the digital zoom feature to be used in recordings.			
	VMS shall comply with any conventional storage technologies (IDE, SCSI, RAID, SAN, CAS, NAS...) to accommodate future potential expansion.			
	It shall be possible to create Recording Schedules on the fly, and assign any schedule to any camera, any group of camera or to all the cameras any time. The recording shall be controlled on hourly basis. It shall be possible to manage recording on per camera basis, each with different video settings (format, frame rate and resolution).			
	Operator shall use a single user interface when managing VMS and Video Analytics.			
	VMS should allow multiple video analytics applications to run on a single camera.			
	The configuration of the system shall be easy and shall not require IT skilled manpower.			
	The configuration and set up shall not require any specific knowledge on a particular DBMS, Operating system or architectural framework.			
	The installation of the software, both in Linux and Windows, shall be done with the help of Scripts to avoid human intervention as far as possible.			
	The PTZ control window shall allow the user to select pre-defined presets for PTZ cameras and drive the selected camera to the preset.			
	The VMS client should support Multi grid manual recording.			
8.4	VIDEO MANAGEMENT SERVER			
	CPU : Intel Xeon Hexa Core 3.2Ghz or Equivalent or Higher			
	RAM : 16 GB Minimum			
	Ethernet : 1 Gbps dual Port			
	HDD : 4 TB - E-IDE, PATA, SATA, SCSI, SAS (7200 RPM or faster)			
8.5	Core i5 4TH GENERATION WORKSTATION WITH DUAL GRAPHICS CARD			
	CPU Intel i5, 2.67 GHz or Equivalent or Higher			
	RAM Minimum 8 GB			
	Ethernet 1 Gigabit recommended			
	Graphics HD Graphics Card Min 2GB VRAM			
	HDD 1 TB - EIDE, PATA, SATA, SCSI, SAS (7200 RPM or faster)			
	Onboard GFX, AGP or PCI-Express, minimum 1024 x 768, 16 bit colors			
8.6	Full HD LED TV			

A.	Screen Type : LED			
B.	Display Size : 106.68 cm (42)			
C.	Display Feature : Full HD			
D.	Screen Resolution : 1920 x 1080p			
E.	Picture Processor : Triple XD			
F.	Aspect Ratio : 7 modes (16:9, Just scan, Original, 4:3, 14:9, Zoom, Cinema Zoom)			
G.	View Angle : 178 Degree			
H.	Refresh Rate : 100 Hz (50) Dynamic MCI			
I.	Speakers : 1 way 2 speakers			
J.	Sound Output : 10W			
K.	Sound Technology : Dolby Digital Decoder			
L.	HDMI : 2 (Rear) USB : 1 (Side)			
M.	Noise Reduction			
N.	Advanced IPS LED LCD Panel			
O.	Smart Energy Saving			
P.	Power Supply : AC 100-240V, 50-60Hz Power Consumption : 90W (Typ), 0.5W (Standby Mode)			
8.7	Smart LED Full HD TV			
A.	Screen size : 60 inches			
B.	Resolution : 1080p Full HD (1920 x 1080)			
C.	Picture Processor : Triple XD			
D.	Processor : Dual			
E.	Natural Voice Recognition : Yes			
F.	Screen Share : Yes			
G.	Audio Output : 20W			
H.	Dolby Digital Recorder : Yes			
I.	Wi-Fi : Built In			
J.	Wi-Fi Direct : Yes			
K.	USB : DivX HD (Video)			
L.	Smart Star Qualified			
M.	HDMI : 3 (Side) USB : 3 (Side) LAN : 1 (Rear)			
N.	Power Supply (Voltage, Hz) : 100~240Vac 50-60Hz			
O.	Power Consumption Standby Mode : 0.3W			
8.8	Cat 6 cable, conduit/casing, fixing materials including cable laying, cabling charges			
8.9	Installation, Testing, Training and Commissioning Charges			
9	MAIN DISTRIBUTION SWITCH ROOM ELECTRONICS COOLING SYSTEM UNIT			
1	The High Performance Industrial type DX air-cooled 3 TR units, which is of only wall mounted type as per site condition.			
2	The unit shall be designed to run 24 X 7 X 365 days.			
3	The air-conditioning unit shall be designed specifically for high sensible heat ratio (> 0.90) applications.			

4	The system shall contain Scroll compressor, Evaporator blower, coil, Microprocessor & electrical and Expansion valve all of which shall be contained within the cabinet of the unit. The outdoor condensing unit shall be air-cooled type comprising of coil, fan, motor, compressor.			
5	The Industrial Split environmental control system should be designed for convenience and dependability and Critical Equipment cooling Application.			
6	Industrial-split units shall composed of an indoor evaporating unit and outdoor condensing unit.			
7	The Industrial-split unit shall having two cabinets evaporating unit and condensing unit.			
8	Industrial Split, the refrigerant piping between indoor and outdoor unit has to be done at site.			
9	The compressor should operates at 2900 RPM @ 50 Hz and feature a suction gas cooled motor, internal centrifugal oil pump, Vibration isolating mountings, internal thermal overloads, high & low pressure switches.			
10	Compressorized cooling is to be provided by a high efficiency system consisting of a scroll compressor, thermostatic expansion valve, evaporator & condenser coils. A scroll compressor is to be used for reliable, quiet & smooth operation at a high EER value (Energy Efficiency Ratio).			
11	The refrigeration circuit should includes a liquid line filter drier, an adjustable externally equalized expansion valve, and high and low pressure switches.			
12	The evaporator coil shall be constructed of mechanically expanded copper tubes in enhanced surface aluminum fins..			
13	The air-cooled condenser coil shall construct of mechanically expanded copper tubes in enhanced surface aluminium fin.			
14	Evaporator air shall supplied by a dual, direct drive blower package. The fans shall centrifugal, double width, double inlet.			
15	A replaceable evaporator air filter should be supplied with the unit. The filter shall easily serviceable through the front. The filter shall 2 inches deep, pleated, with a minimum efficiency rating of 80-85 % down to 20 microns (based on ASHRAE standard 52-76) located within the cabinet.			
16	The Exterior cabinet shall be constructed of CRCA and power coated for weather resistance. Internal structural parts shall be folded steel.			
17	Micro processor control A microprocessor based control system shall be supplied with unit. Controller should indicate actual Return Air temperature. Desire temperature can be set the controller Controller should show the status of the functional part. Controller should generate alarm in case of any malfunction (high temperature, high Pressure, low pressure etc.)			

SPECIFICATIONS AND REQUIREMENTS OF CABLES AND COMPONENTS FOR PASSIVE NETWORKING

GENERAL REQUIREMENTS

Following are the general requirements.

All the passive network cabling components i.e., UTP CAT 6, IO Box Assemblies and Patch Panels must be from the same manufacturer and ROHS compliant. The manufacturer must have ISO 9001:2000, QS:9000 and ISO14001 certifications.

The network cables must cover a performance warranty of minimum 25 years or lifetime and a defect liability period of 3 years. Bidder shall ensure that these requirements are provided by the manufacturer.

UTP CAT6 components should have independent lab verification like ETL certificates and UL numbers

Manufacturer of the passive network cabling components to be supplied by the bidder must have complete structured cabling system which must be upgradeable in future to intelligent system by retrofitting of sensors or any other means.

Written declaration from manufacturer shall be provided to NIT Raipur by the bidder in this regard.

UTP CABLE

SN	Specification	Compliance Yes/No	Deviation if any	Remarks
1.	Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA/EIA-568-B.2-1 Additional Transmission Performance Specifications for 4-pair Category 6 Cabling.			
2.	Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP with FR PVC jacket.			
3.	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.			
4.	The cable jacket shall be FR PVC			
5.	Incorporates central spine maintaining pair separation during installation to ensure premium performance after installation.			
6.	Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted. Conductor Solid Copper Conductor Diameter 0.56±0.005mm (23 AWG) Insulator Polyolefin Jacket FR PVC Outer Diameter 6.0±0.4mm Max. Temperature 75°C			
7.	ROHS/ELV Complied			

MODULAR JACKS / IO

S.No.	Specification	Compliance (Yes/No)	Deviations, if any	Remarks
1.	CAT 6 Data Gate Plus Jack shall be designed for maintaining clean and secure connections RJ 45 Jack shall have spring-loaded shutter which protects it from dust and contaminants as well as provides tactile feedback – the spring loaded shutter shall pop out an improperly seated patch cord all with single handed plug-in and removal			
2.	Wire Terminal: 200 Termination Cycles			
3.	Modular Jack: 750 Mating Cycles			
4.	Plastic Housing: Polycarbonate, UL94V-0 rated or equivalent			
5.	IDC Contact Plating: Tin/Lead Plate			
6.	Faceplate: Square Shuttered Plate with 1/2 ports, 86 mm x 86mm			
7.	ROHS/ELV compliant			

FACE PLATES

S.No.	Specification	Compliance (Yes/No)	Deviations, if any	Remarks
1.	86mm x 86mm Face/Wall Plate			
2.	Should accept up to 4 keystone modules. Should load shuttered or non-shuttered modules, designation label, clear label cover, mounting screws and screw covers			
3.	Should have channel identification via color matched snap-in plastic icons that are pre-printed with graphic symbols or text labels			
4.	Text icon labels in seven bright colours pre-printed with Category 5e and 6, phone, fax, LAN and ISDN			
5.	Image icons shall be available in seven brightly coloured grey, green, purple, blue, yellow, orange, and red.			
6.	The Face/Wall Plates should: (a)Accept RJ45 Keystone Modular Jacks (b)Have a Grid Plate with Standard White Colour Surrounds (c)Have protected clear designation label windows (d)Be supplied complete with self-tapping screws			
7.	Face/Wall Plates shall have the following Dimensions (H x W) Grid Plate Only British Standard Faceplates: UK Style Faceplate Frame Fitting Standard 86x86 mm U.K. Backboxes			

CAT6 Modular Patch Panel / Jack Panel:

S.No.	Specification	Compliance Yes/No	Deviations, if any	Remarks
1.	19" 24-port, loaded with Jack , A key product used in both Category 6 link and channel gigabit Ethernet applications. The IDC section consists of V-shaped contacts that flex not fatigue when terminated. Each port features spring-loaded shutter and can be colour coded to match jack outlets. Offering both front and rear labeling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.			
2.	Ports : 24 and 48			
3.	Plastic Housing Jack Connector :Polycarbonate, UL94V-0 rated or equivalent			
4.	Contact Plating: 50μ" Gold/100μ" Nickel			
5.	Front Connector interface : RJ45			
6.	Circuit Identification Scheme : Icons on each of 24-ports			
7.	Port Identification : 9mm or 12mm Labels on each of 24-ports (to be included in supply)			
8.	Height 1 U (1.75 inches)			
9.	ROHS/ELV Compliant			

F.O. SM Cable**SM 6 Core Armored Unitube 9/125μm OS1 Type Optical Cable:**

SN	Specification	Compliance Yes/No	Deviations, if any	Remarks
1.	Cable shall be suited for ducts and of the following type: SM 6 Core Armored Unitube Gel filled OS1 Cable shall comply with the following minimum standards: ISO.IEC 11801:2002 - 2nd Ed., OS1; AS/ACIF S008; AS/NZS 3080, ITU-T REC G 652D for low water peak fiber, IEC 60793/60794, TIA 568, EIA 455			

2.	Max. short term tensile strength shall be 1000N			
3.	Max. short term crush resistance: 2000N/10CM			
4.	-10° C to + 70°C operating temp range			
5.	Thickness of Corrugated Steel Tape Armour shall be greater than or equal to 0.125mm			
6.	Strength members shall comprise of two Steel wires			
7.	Covering sheath shall be made of UV stabilized HDPE			
8.	Fibre protecting tube shall be made of Polybutylene Terephthalate material			
9.	Thixotropic Gel (Tube) with Petroleum Jelly (Interstices) shall be used for water blocking			
10.	Max. Bending Radius at the time of installation shall be 20 times the overall dia			
11.	Overall dia of cable: 9.5-9.9 mm			
12.	Nominal mass shall be 95 kilograms per kilometer			
13.	Attenuation at 1310 nm shall be less than or equal to 0.34 dB/KM while at 1550nm it shall be less than or equal to 0.22 dB/KM			
14.	Numerical Aperture value of 0.14			
15.	Core/Mode-Field: 9 micrometer; 1310nm mode field dia shall be $9.2 + 0.4 \mu\text{m}$			
16.	Cladding Dia shall be $125 \pm 1.0 \mu\text{m}$			
17.	Bandwidth shall be greater than 1GHz-Km at 1310nm			
18.	Attenuation Discontinuity in both windows shall be less than 0.10dB			
19.	The cable shall be ROHS compliant			
20.	The minimum expected life of the cable shall not be less than 25 years			

SC-LC SM FO Patch Cords:

S.No.	Specification	Compliance Yes/No	Deviations, if any	Remarks
1.	ROHS Compliant SC to LC Duplex/Simplex tuned optic fiber Patch Cord 3m length, 9/125 μm			
2.	-10°C to +60°C operating temperature			
3.	LSZH cable sheath			
4.	Insertion loss up to 0.3 decibels			
5.	Return Loss shall be greater than 45 decibels			

6.	1.8mm twin zip cable dia			
7.	Ceramic ferrule			
8.	Tight buffer			

Rack Mount Fiber Panels:

S.No.	Specification	Compliance Yes/No	Deviations, if any	Remarks
1	ROHS Compliant 1U rack mount configurable fiber drawer unit for storing and terminating incoming fiber cable. Using 6 Pak Plates the fiber system can be configured for most applications. Sliding drawer for ease of reconfiguring fibers.			
2	Rugged steel construction with attractive finish; Weight approx 5 kg; Compact size (mm): 45mm H x 485mm W x 255mm D			
3	Configurable; Fits up to four 6 Pak / Angled 6 Pak plates			
4	In-system management rings for accommodating excess fiber cordage behind trough adapters and maintaining fiber bend radius			
5	Accommodates 2 x 12 fiber Splice Trays			
6	F.O. Adapter Plates Loaded : SC Duplex 6 Fiber SM Adapter Plate			
7	LIU Should be provided with Lock & Key			
8	No of Adapter Plates Req'd : As per Requirement			
9	Pigtails : SC, Single mode, 9/125 μ m qty depend on Connection			

Fiber Pigtails:

S.No.	Specification	Compliance Yes/No	Deviations, if any	Remarks
1.	ROHS Complaint 900 μ m Tight Buffered cable pigtail of 1.5m length			
2.	Attenuation at 1310 nm $\leq$ 0.36 dB/KM at 1550nm $\leq$ 0.22 dB/KM			
3.	100% Factory Tested and Guaranteed Performance polishing			
4.	Connector End: 1 X SC Connector S.M Zirconia ceramic ferrule.			
5.	-10 Degrees to + 60 ° C range of operating temperature			

6.	LSZH sheath			
7.	30mm min bend radius			
8.	Retention Strength : 100N			

42U, 15U, 12U and 6U racks must be from the same manufacturer for uniformity.

42U Rack:

Sl. No	Specification	Compliance Yes/No	Deviations, if any	Remarks
1	Made of steel sheet punched, formed, welded and powder coated			
2	Manufacturer must be ISO 14001 Certified & UL Listed			
3	Welded frame with side panel and vented top cover			
4	Perforated Metallic Front Door and Rear Metal Door			
5	Provision for Floor Mounting			
6	Rack 42U (1U = 44.45 mm) in Height.			
7	600MM Wide & 800MM Deep			
8	Conforms to DIN 41494 or Equivalent EIA / ISO / EN/CEA Standard			
9	Adjustable mounting depth			
10	Rack 4 No Adjustable, 19" verticals with Punched 10mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern			
11	Numbered U positions			
12	100% assured compatibility with all equipment conforming to DIN 41494			
13	Powder coated finish with seven Tanks pre-treatment process meeting IS			
14	Proper Grounding & Bonding Provision			
15	One number heavy duty Full tray			
16	Should have Fan module Mount Provision on top Cover with 4 Fan Housing unit			
17	Should have 2 Nos. 1Ph, 230V, 32A, Zero U standard Vertical rack mount power distribution unit with 12 X Indian Round Pin 5/15A, (Inlet Plug Not Installed, Recommended IEC30932A 2P +E), 16A MCB X 2 Circuits- PDU Rating 7.3KVA			

18	Should have 2 Nos. Horizontal & Vertical Cable Organizer with Plastic Loops.			
19	Provision for cable entry - exit from Both top & Bottom.			
20	Should have 1 Packet of mounting hardware, Pack of 20.			

15U/12U/6U Wall Mount Rack:

Sl. No	Specification	Compliance Yes/No	Deviations, if any	Remarks
1	Shall be manufactured out of steel sheet punched, formed, welded and Powder coated			
2	Manufacturer must be ISO 14001 & IS18001 & UL Listed.			
3	Welded frame and vented top cover			
4	Perforated Metallic Door with lock & Key			
5	15U(1U=44.45 mm) in Height, 550MM Width, 600MM Depth			
6	Conforms to DIN 41494 or Equivalent EIA /ISO / EN/CEA Standard			
7	Adjustable mounting depth,			
8	4 No Adjustable, 19" verticals with Punched 10mm Square Hole and Universal 12.7mm-15.875mm-15.875mm alternating hole pattern			
9	Numbered U positions,			
10	100% assured compatibility with all equipments conforming to DIN 41494			
11	Powder coated finish with seven Tank pre-treatment process meeting IS			
12	Provision for Proper Grounding & Bonding			
13	Shall have one cantilever shelf			
14	Fan module Mount Provision on top Cover with 2 fans			

15	Shall have one 1Ph, 230V, 16A, 2U standard rack mount power distribution unit with 6 X Indian Round Pin 5/15A, Inlet Plug type 16A Indian Round Pin, 16A MCB - PDU Rating 3.6KVA			
16	Shall have 1 No Horizontal Cable Organizer with Plastic Loops.			
17	Shall have provision for cable entry Exit from Both top & Bottom.			
18	Shall have 1 Packet of Mounting hardware, Pack of 10			

TECHNICAL SPECIFICATIONS OF ITEMS LIKE ELECTRIC CABLES AND CONDUITS etc.

The materials intended to be supplied and installed under the following specifications should be in accordance with the following.

- a) Indian Electricity Act
- b) Indian Electricity Rules.
- c) IEC 364-5-54, Electrical Installations of Buildings
- d) IS 3043 / IEC 60364 - Earthing

Specifications of Electrical Cables and Conduits

The conductors should be drawn from 99.97% bright electrolytic grade copper with more than 100% conductivity, are annealed and bunched together. The conductors should be insulated with a PVC compound with high insulation resistance and dielectric strength, formulated and manufactured in-house.

In case of multi-core cables, the insulated cores should be laid up to form the core assembly. The inner cores are coded for ease of identification as per National/International coding practices. The sheathing is provided with a specially formulated PVC compound to facilitate not only ease in stripping but also to withstand mechanical abrasion while in use. These PVC compounds used for insulation and sheathing have a high oxygen and temperature index. These properties help in restricting the spread of fire even at very high temperatures.

The single core and multi-core sheathed cables are to be manufactured as per IS 694 : 1990, in sizes from 0.5 sq. mm. to 50 sq. mm. in single core, and in sizes 0.5 sq.mm. to 4.0 sq. mm. upto 5 cores. These sizes should carry the ISI mark and duly approved by FIA/TAC. The rest of the sizes should generally conform to IS 694 : 1990.

Specifications of PVC Conduits

PVC Conduit pipes of sizes 20 / 25 / 32 mm, standard 3 mtrs length, as per site requirement, should be manufactured as per IS:9537 part-III - 1983 standards. Color – Ivory / White.

Mechanical Properties

- Percentage of Compression with specified load less than 25%
- Percentage of Compression without load less than 10%
- High Impact Strength
- Tensile Strength - 390-420 Kg/cm²

Electrical Properties

- Dielectrical Strength = 36 Ky/mm
- Specific resistance=6.1 x 10¹⁴ ohm cm
- Electric Strength = No breakdown at 2 Kv x 50 hz. For 15 minutes

Thermal Properties

- Working Temp. = 70°C
- Burning rate = Self Extinguishing
- Flammability = UL94V-0
- Flame Die out Time = Less than 30 seconds

NOTE : All conduit fittings like coupler, reducer, tee, elbow, etc. should also be from the same manufacturer.

Specifications of PVC Wall Trunking

All the electric installations require continuous protection of conductors over the whole length, especially at angles and at wiring accessory penetration points. The DLP trunking system includes accessories designed to simplify installation, from fixing the trunking to mounting Arteor / Mosaic, for a perfect finish all along the line. DLP PVC wall trunking is expected for distributing current as close as possible to the workstations or executive tables which are installed along the wall or partitions. UPVC trunking ensure total separation of currents even where electromagnetic disturbance is present. Snap-On trunking is used for routing cables and installing wiring accessories in work areas. It supports multiple functions from the arteor range by simply clipping directly onto the trunking.

Specification of Pop-up boxes

Sleek new ergonomically designed pop-up boxes, square or rectangular in shape, provide real ease of use and rapid connection solutions for mobile applications such as PCs, mobile phones, audio and video systems. The pop-up boxes should be either of hydraulic type or spring loaded. The top should be aesthetically matching with the furniture. The pop-up boxes should have at least 3 ports for power, 2 ports for data, audio ports (speaker and microphone) and VGA port, 1 HDMI port, 2 USB ports.

Specification of Junction boxes

Height adjustable squared junction boxes allow easy access when installing cables and for extensions. They ensure data security and performance that facilitate the addition and connection of new digital equipment, which helps reduce operating costs. The junction box sizes should be as per site requirement.

CHAPTER 5: PRICE SCHEDULE (To be utilised by the bidders for quoting their prices)

Items 6,7,19, 61 and 62 have been left blank. Bidder is to ignore them. Where non-bracketed and bracketed values are mentioned, bidder may ignore the bracketed values, otherwise where only bracketed values are mentioned, bidder has to consider the same. Mention tax and duty percentages separately.

S.No.	ITEM	QTY FOR CCC	QTY FOR TPO	NET QTY	UNIT PRICE	PRICE FOR NET QUANTITY
1.	50 mm thick 1000mm.ht. Workstation / Table top size 750mm x 600mm (w/o partition panel)	160	0	160		
2.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	225	0	225		
2(a)	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 750mm x 600mm	0	5	5		
3.	50 mm thk 1200mm.ht. Panel Based Workstation / Table Top size 1050mm x 600mm	35	0	35		
4	KBPT	460	15	475		
5	CPU Trolley	460	15	475		
6	--	--	--	--	--	--
7	--	--	--	--	--	--
8	Self Standing Table Desk with Pedestal	14	0	14		
8(a)	Self Standing Table Desk with Pedestal	0	3	3		
9	Workstation Chair Medium Back Revolving Chair	435	5	440		
10	Visitor Chair	52	0	52		
11	Single Bed	8	0	8		
12	Corner Table	4	0	4		
13	Comfortable Chair	8	0	8		
14	Mattress 1950mm X 1000mm	8	0	8		
15	Pillow	8	0	8		
16	Bedsheet and Blankets	8	0	8		
17	Wardrobe	4	0	4		
18	Heavy Duty Work Table of Depth WxDxH 1800mm x 900mm x 750mm	4	0	4		
19	--	--	--	--		
20	High back chair	6	0	6		
21	Steel Almirah	24	3	27		
22	4 Seater Table Plyboard Top	6	0	6		
23	Reception Table - 1800mm X 600mm (for 3 persons)	3	0	3		
24	Personal Locker Unit	15	0	15		
25	Executive Desk (2400 X 1050 X 750) mm with pedestal & Side Unit	1	1	2		
26	Back Unit (1000W X 450D X2100H)mm.	2	2	4		
27	Executive High Back Chair	1	5	6		
28	Magnetic board (900 X 600)mm.	3	1	4		
29	White board (900 X 750)mm.	3	1	4		
30	Medium Chair	4	0	4		
31	Executive sofa (3+1+1)	1	1	2		
32	Premium lounge Chair (3 Seater)	10	4	14		

33	Corner Table	2	4	6		
34	Coffee Table with Shelves	1	1	2		
35	Executive Desk (2100 X 900 X 750)mm. with Pedestal Storage Unit & Side unit	1	0	1		
36	Back unit (2250 X 400 X 2000)mm	1	0	1		
37	Executive High Back Chair	1	0	1		
38	Medium back Chair	3	0	3		
39	Coffee Table with Shelves	1	0	1		
40	Corner table	2	0	2		
41	3 seater Sofa	1	0	1		
42	Single seater sofa	2	0	2		
43	Movable Storage System: Single faced static unit - 1980H X 1830W X 457D mm	2	1	3		
44	Movable Storage System: Single faced movable unit 1980HX1830WX457D mm	2	1	3		
45	Movable Storage System: Double faced movable unit - 1980H X 1830W X 914D mm	2	1	3		
46	Channel 9 ft.	2	1	3		
47	3 seater Sofa	1	0	1		
48	Single seater sofa	2	0	2		
48(a)	Comfortable Sofa Set (3+1+1)	0	1	1		
48(b)	Sofa set (3 seater)	0	1	1		
49	High back chair	0	20	20		
50	Medium back Chair	31	32	63		
51	4 door Book case (914mm Wx 380mm Dx 1750mm H)	8	3	11		
52	Executive Table(1650 X 750) mm., side unit & Back storage unit	1	1	2		
53	10-Seater Conference table	0	2	2		
54	Discussion/Meeting table (4 seater)	0	8	8		
55	Fixed type educational training chair	0	140	140		
56	Self Standing Table with pedestal (1800 X 900 X 750)mm	1	0	1		
57	Mesh High back chair	0	1	1		
58	Fixed Visitor Chair	0	9	9		
59	Coffee Table: size is 1200mm (W) x 600mm (D) x 450mm (H)	1	0	1		
60	Coffee table: size is 1000mm (W) x 600mm (D) x 450mm (H)	1	1	2		
61	--	--	--	--	--	--
62	--	--	--	--	--	--
63	Self Standing Table with metal leg(1200 X 600)mm. & pedestal	4	0	4		
64	Mesh high back Chair	3	0	3		
65	Self Standing Table with metallic leg & pedestal (1650 X 900 X 750)mm.	16	0	16		
66	Curtains with Rods and Fixtures Length of curtain fixtures = 200 metres Curtains = 600 square metres	As per site requirement	As per site requirement			
67	Stackable Cafeteria Chair	0	150	150		
68	Slotted Angle Rack	5	0	5		
69	1' x 2' Mirrors	0	4	4		

	PASSIVE CABLING AND NETWORKING RELATED Bidders must ignore Item No. 2					
1.	Network Cabling: Horiz. UTP cabling for approx. 500 nodes dual port across 3 floors					
1 (a)	Cat6 UTP Cable, Blue (Box of 305 mtrs)	100		100		
1 (b)	Cat6 Patch Cord, 1 Mt., Green	500		500		
1 (c)	Cat6 Patch Cord, 2 Mts., Green	500		500		
1 (d)	24 Port unloaded modular Jack Panel	42		42		
1 (e)	Cat6 UTP Jack, White	2000		2000		
1 (f)	Dual shuttered Face Plate	500		500		
2-	—	—	—	—	—	—
3.	Network Cabling: Racks for 3 floors					
2(a)	12U, Wall Mount Rack with all accessories	6	4	10		
2 (b)	42U (600 x 1000 mm) Rack with vertical cable channels, 6 horizontal cable manager, two vertical power manager Castor wheel, Fan, 4 pkt of Hardware Front Panel and other accessories, as per specifications.	4		4		
4.	Network Cabling: BIS/ISI marked perforated cable trays of make approved by CCC for laying electrical and data cables. The trays shall have to be fixed on mounting brackets on the floor or suspended from the ceiling, as per site requirement and approval of the client. The cable tray height shall be 50 or 75 mm. Tray widths shall be 50, 100, 150, 300, 450 & 600 mm and shall be installed as per site requirement. Cable trays shall either be hot-dipped galvanized or powder coated, as per standards. The cable tray system should include all mounting & fixing accessories, e.g. vertical / horizontal bends, inside / outside bends, reducers, etc. The trays shall have to be pre-painted in order to distinguish between a power and network. The bidder has to submit a detailed cable tray layout detailing various cable tray types with quantities along with the bid. Cable Tray Sheet thickness = 1.2 - 1.5 mm; Height = 50-75mm Width = 600mm (50 metres) Width = 300mm (100 metres) Width = 150mm (200 metres)	As per site requirement		As per site requirement		
5.	PVC Conduit, in meters	600 metres		600 metres		
6.	Network Cabling: Snap-on columns and DLP U-PVC/aluminium/snap-on trunking system for power and data distribution, as per site requirement. 2000 metres	As per site requirement		As per site requirement		
7.	Network Cabling: Floor boxes /groumets /desktop extensions/ pop-up boxes for cable junction/termination, as per site requirement.	50		50		
7 (a)	Consolidation Boxes, (2U+2U) for termination of network cables.	4		4		

7 (b)	Raised Access Flooring (in Sqmt), using steel panel having a cementitious core, HPL pre-fixed, PVC beads with edge support rigid grid understructure system. Access floor system to be installed shall provide a maximum finished floor height of 450 mm from the existing floor level. The system shall provide for suitable floor tiles, pedestals and stringers designed to withstand a minimum UDL of 500 Kgs / Sqmt.	20		20		
8.	Network Cabling: Installation Services					
8 (a)	Laying of UTP Cable	30500 metres		30500 metres		
8 (b)	Termination of 24 Port Cat6 Jack Panel	42		42		
8 (c)	Termination of Cat6 I/O	2000		2000		
8 (d)	Installation of 12U Rack	As per site requirement		As per site requirement		
8 (e)	Installation of 42U Rack	4		4		
8 (f)	Installation of Cable Trays / Raceway 350 metres	As per site requirement		As per site requirement		
8 (g)	Fixing of PVC Conduit	600		600		
8 (h)	Fixing of consolidation boxes	4		4		
8 (i)	Installation of Raised Access Floor including necessary tile cuttings, etc.	20		20		
	ELECTRICAL CABLING RELATED					
1.	Flexible Cu cable, 3 x 2.5 sq. mm.; rodent and fire resistant; BIS/ISI marked; make approved by CCC	3000 metres				
2.	Modular Power Sockets and Switches with back boxes / face plate; BIS/ISI marked; make approved by CCC	500				
3.	Power Distribution Boards (PDB); BIS/ISI marked; make approved by CCC	12				
	RODENT REPELLANT SYSTEM					
.1.	Rodent Repellent System: Rodent Repellent System shall be provided to protect the premises against any rodent infestation, the technical specification of Rodent Repellent System are as given below: (a) General Objective: The objective is to protect the entire premises against rodents. The purpose is to keep the rodents away from the floor by generating very high frequency sound waves (above 20 KHz) which are not audible to human ear but irritates rodents. The objective is to protect all the cables below floor, above ceiling & room void from damage caused by rodents. (b) Scope: The system proposed should protect all the ICT equipments with relevant type of high frequency sound producing device called satellites or transducers. The number of transducers should ensure that the premises are rodent free.					
2.	Rodent Repellant System: Ultrasound Satellites: j. The satellites or transducers shall be circular ceiling mounted low profile units that produce high decibel sound waves at very high frequency not less than 20 KHz. k. These satellites shall cover an area not less than 400 Sq.ft for Room void application, for ceiling voids & floor void applications. l. No looping is permitted while connecting the satellites to the main controller. m. Every satellite connected to the controller shall have a dedicated connection with the controller.	96				

3.	Rodent Repellant System: Controller Features: k. The controller shall support 12 Transducers and shall come with a pair of stands and brackets. l. The controller shall be installed in the Control / Switch Room and the transducers in the problematic areas i.e. above and below false ceiling and below false flooring. m. 2500 Sq. Feet of Area Coverage per system/ Controller n. Shall drive up to 12 Transducers. With minimum @ 250sft coverage each o. LCD display with on-board controls for changing parameters	8				
4.	Rodent Repellent System: Mounting Rack	8				
5.	Rodent Repellent System: Flexible cable	3000 metres				
6.	Rodent Repellent System: Installation Services	8				
	ELECTRONIC/ELECTRIC FURNISHING ITEMS					
1.	Audio Visual System					
1.1	240W Power Amplifier with gain control and high-pass filter, as per specifications. (01 per classroom)	4	1	5		
1.2	Professional high quality Gooseneck Microphone, as per specifications. (01 per classroom)	4	1	5		
1.3	Miniature omni directional electret condenser lavalier type microphone. (01 per classroom)	4	1	5		
1.4	Wall mount column speakers, 20 W RMS, Frequency response 150 Hz - 10 KHz, along with mounting accessories, as per specifications. (04 per classroom)	16	4	20		
1.5	Wall mount rack, 6U, as per specifications. (01 per classroom)	4	1	5		
1.6	Portable Wireless LCD Projector, brightness of 4500 lumens, built-in speaker, along with ceiling mounting bracket, as per specifications. (01 per classroom)	4	1	5		
1.7	Interactive / Electronic Whiteboard, as per specifications. (01 per classroom)	4	1	5		
1.8	Cables & conduits, as per site requirement.	600 Mtrs	200 Mtrs	800 Mtrs		
1.9	Installation, Commissioning & Testing, of the above.	4 lots	1 lot	5 lots		
2.	Public Address System					
2.1	MP3 player for the Existing Public Address System	1	0	1		
3.	Water Coolers with complete RO & UV system, as per specifications.	3	1	4		
4.	Two-door refrigerators, as per specifications	2	1	3		
5.	Microwave Oven, as per specifications. To be supplied with standard cookware set	1	1	2		
6.	Induction Cooker with Cookware Set	1	0	1		
7.	Coffee Tea Soup Vending Machine	1	1	2		
8.	IP Surveillance System					
8.1	Megapixel IR Dome Network Camera with Varifocal Lens, PoE, ONVIF Profile S Compliant, UL Listed	As per site requirement	As per site requirement	45		
8.2	Network Attached Storage with 50 TB HDD	1	0	1		
8.3	Open Platform Video Management Software including 45 nos. of camera connection license	1	0	1		
8.4	Video Management server	1	0	1		

8.5	i5 4th generation workstation with dual graphics card	1	0	1		
8.6	42 inch Full HD LED TV, as per specifications	1	2	3		
8.7	60 inch Smart LED Full HD TV with Ethernet Port / Wi-Fi, USB, HDMI port, as per specifications.	2	0	2		
8.8	Cat 6 cable, conduit/casing, fixing materials including cable laying, cabling charges	As per site requirement	As per site requirement	2000 metres		
8.9	Installation, Testing, Training and Commissioning Charges	1Lot	0	1Lot		
9.	Main Distribution Switch Room Electronics Cooling System Unit	4	0	4		
	Grand Total (in numerical figures and words)					

CHAPTER 6: CONTRACT FORM

Please refer point no. 24 of Chapter 2: Conditions of Contract of this tender document.

Chapter 7: Other Standard Forms
To be utilised by the purchaser and the bidders.

FORM 1: BIDDER'S SELF INFORMATION FORM

1. Tender Enquiry No. and Date
2. Bidder's Reference No. and Date
3. Name of firm
4. Address of firm
5. Telephone No.
6. Fax No.
7. E-mail Id:
8. Website, if any
9. Permanent Account No:
10. Sales Tax Registration No.
11. Service Tax Registration No.
12. Financial turnover of 2012-2013 In INR in figures as well as words
13. Financial turnover of 2013-2014 In INR in figures as well as words
14. Financial turnover of 2014-2015 In INR in figures as well as words*

*Note: If Financial turnover data of 2014-2015 is not available, please provide turnover of 2011-2012

15. Details of the authorized signatory of the bidder including name, designation and Postal address with telephone, mobile, fax and email (Add rows to include all authorized signatories) (Affix authorized signatory's signature in this space) (Affix authorized signatory's recent coloured passport size photo in this space)

16. Details of the officer (Bidder's Prefect Manager for this project) to whom all references shall be made regarding this tender enquiry including name, designation and postal address with telephone, mobile, fax and email (Affix officer's signature in this space) (Affix officer's recent coloured passport size photo in this space)

17. Bid Processing fee Details

18. EMD Details Attach Attested Copies

Date:

Place:

Signature:

Name:

Designation:

Company:

Seal of the company

FORM 2: BANK GUARANTEE FORMAT FOR EARNEST MONEY DEPOSIT

To

.....
.....
.....
.....

WHEREAS _____ (Name of Bidder) (hereinafter called "the Bidder" has submitted its Bid dated _____ (Date) for the execution of contract "Supply and Installation of Furniture Items, Furnishings, Electrical and Network Cabling for CCC and TPO Building in NIT Raipur" (hereinafter called "the Bid") in favour of National Institute of Technology Raipur hereinafter called the "Employer";

KNOW ALL MEN by these presents that we, _____ (name of the issuing Bank), a body corporate constituted under the _____ having its Head Office at _____ amongst others a branch/office at _____ (hereinafter called "the Bank" are bound unto the employer for the sum of Rs. 15,00,000/- (Rupees Fifteen lacs only) for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents;

THE CONDITION of this obligation is: If the bidder withdraws or amends their quotation before the issue of work-order to the successful bidder by the employer, or fails to submit PBG within stipulated time, (in case he becomes the successful Bidder), We undertake to pay to the Employer up to the above amount upon receipt of his first written demand without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of any of the above conditions. Notwithstanding anything contained herein

i)Our liability under this Bank Guarantee shall not exceed Rs15,00,000/- (Rupees Fifteen lacs only)

ii)This Bank Guarantee is valid up to _____ (date) and

iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand On or before _____ (mention period of guarantee as found under clause (ii) above plus claim period)

Dated _____ day of _____ 20_____

SIGNATURE AND SEAL OF THE BANK

**FORM 3: BANK GUARANTEE FOR 5% OF CONTRACT VALUE FOR CONTRACT PERFORMANCE GUARANTEE
BOND FOR SUPPLY AND INSTALLATION OF FURNITURE ITEMS, FURNISHINGS, ELECTRICAL AND NETWORK
CABLING FOR CCC AND TPO BUILDING IN NIT RAIPUR**

Ref

Date.....

Bank Guarantee No

To

Director

National Institute of Technology

G.E. Road

Raipur

1. Against contract vide Advance Acceptance of the Tender No dated..... covering supply/ installation/ commissioning of hereinafter called the 'Contract'), entered into between the Director, National Institute of Technology, Raipur (hereinafter called the NIT Raipur) and (hereinafter called the 'Contractor') this is to certify that at the require of the Contractor we Bank Ltd., are holding in trust in favour of the Director, NIT Raipur, the amount of (write the sum here in words) to indemnify and keep indemnified the Director, NIT Raipur against any loss or damage that may be caused or likely to be caused to or suffered by Director, NIT Raipur by reason of any breach by the Contractor of any of the terms and conditions of the said contract and/or the performance thereof whether any breach of any of the terms and conditions of the said contract and or in the performance thereof has been committed by the Contractor and amount of loss or damage that has been caused or suffered by Director, NIT Raipur shall be final and binding on us and the amount of the said loss or damage shall be paid by us forth with on demand and without demur to Director, NIT Raipur.

2. We, Bank Ltd., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfilment in all respects of the said contract by the Contractor i.e. till (viz. the date up to 3 months after the last date of warranty on goods/services supplied under the contract) hereinafter called the "said date" and that if any claim accrues or arises against us, Bank Ltd., by virtue of this guarantee before the said date, the same shall be enforceable against us Bank Ltd., notwithstanding the fact that the same is enforced within six months after the said date. Payment under this letter of guarantee shall be made promptly upon our receipt of notice to that effect from Director, NIT Raipur.

3. It is fully understood that this guarantee is effective from the date of the said contract and that we, Bank Ltd., undertake not to revoke this guarantee during its currency without the consent in writing of Director, NIT Raipur.

4. We Bank Ltd., further agree that the NIT Raipur shall have the fullest liberty, without affecting in any manner our obligations hereunder to vary any of the

terms and conditions of the said contract or to extend time of performance by the Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by NIT Raipur against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said contract and We Bank Ltd., shall not be released from our liability under this guarantee by reason of any such variation of extension being granted to the said Contractor or for any forbearance and or omission on the part. of NIT Raipur or any indulgence by NIT Raipur to the said Contractor or by any other matter the effect of so releasing us from our liability under this guarantee.

5. We Bank Ltd., further agree that the guarantee herein contained shall not be affected by any change in the constitution of the said Contractor.

Date **Signature**.....

Place **Printed Name**.....

Witness

(Designation)

.....

(Bank's Common Seal)