

**BID DOCUMENT For
Development of
Campus Wide Digital Network
Solutions and Services For
New Blocks At
Masjid Moth, AIIMS New Delhi
and NCI Jhajjar**

VOLUME – V

Bill of Quantities

APRIL-2018



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Tender No. :-HSCC/AIIMS/IT/2018

Summary Sheet for Bill of Quantity (BOQ) for Development of Campus Wide Digital Network Solutions and Services For New Blocks At Masjid Moth, AIIMS New Delhi and National Cancer Institute (NCI) Jhajjar

Name of Bidder			
Sr. Nos.	Description	Amount (In Rs.)	Amount (in Words)
PART A			
1	New OPD Block		
2	Mother and Child Block		
3	Surgical Block		
4	NCI Jhajjar Campus		
	Total of Part A (1+2+3+4)		
	Part B: Comprehensive Operation, Maintenance and support services during warranty period - for 1-5 years		
5	New OPD Block		
6	Mother and Child Block		
7	Surgical Block		
8	NCI Jhajjar Campus		
	Total of Part B (5+6+7+8)		
	Grand Total (Total of PART A + Total of PART B)		
	Grand Total (Total of PART A + Total of PART B) in words		

PART (A - I)

<p align="center">Bill of Quantity (BOQ) for Campus Wide Network Solution (Development of Network Infrastructure for New OPD Block, AIIMS, NEW DELHI)</p>						
<p align="center">Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc.</p>						
Sr. Nos.	Item Description	For initial installation + 5 years warranty period				CAMC amount (in Rs.) for 5 years after warranty period of 5 years. (for the period from 6th to 10th year)
		Quantity	Unit	Rate (in Rs.)	Amount (in Rs.)	
1	2	3	4	5	6	7
Active Devices						
1	Core Switch (Make - As per approved make)					
1.1	Supply, installation, testing and commissioning of Core Switch as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer along with 24X7 support and 5 year comprehensive warranty	3	Nos.			
1.2	Supply, installation, testing and commissioning of 100G BASE-LR, OPTICAL (LC) for upto 10 Km SMF Module for the core switch and associated patch cords and other accessories for the 100 G connectivity as per the requirement & complete in all respect and as directed to the satisfaction of engineer	4	Nos.			
1.3	Supply, installation, testing and commissioning of 40G QSFP Direct attach cable 1 mtr OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	10	Nos.			
1.4	Supply, installation, testing and commissioning of 40G QSFP Multi Mode Fiber Transceiver as per the requirement & complete in all respect and as directed to the satisfaction of engineer	46	Nos.			
1.5	Supply, installation, testing and commissioning of 40G QSFP Single Mode Fiber Transceiver (for up to 2Km) OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	20	Nos.			

2	Distribution Switch- TYPE-3 (Make - As per approved make)				
2.1	Supply, installation, testing and commissioning of Layer 3 Distribution Switch including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12	Nos.		
3.0	Access Switch (Make - As per approved make)				
3.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	27	Nos.		
3.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	15	Nos.		
3.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	Nos.		
3.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	24	Nos.		
3.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, MMF, (for upto 300mtr.) LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	140	Nos.		
4.0	Wireless Solution (Make - As per approved make)				

4.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	300	Nos.			
4.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	8	Nos.			
4.3	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	1	No.			
5	Network Management Solution (NMS) (Make - As per approved make)					
5.1	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
6	Network Access Control (NAC) Solution					
6.1	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
7	Firewall Appliance (Make - As per approved make)					
7.1	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscription includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			

8	Server Hardware (Make - As per approved make)					
8.1	Supply, installation, testing and commissioning of Server Hardware as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
8.2	Supply, installation, testing, commissioning and integration of Certified Linux Operating System with VMWare virtualization for running NAC and NMS as per technical specification mentioned with 5 years comprehensive support warranty as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
Passive Components						
9	CAT6 A Components (Make - As per approved make)					
9.1	Supply of Cat 6A Cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	150000	Metres			
9.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	150000	Metres			
9.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1500	Nos.			
9.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	Nos.			
9.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	3000	Nos.			

9.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	3000	Nos.			
9.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	3000	Nos.			
9.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	50	Nos.			
9.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	500	Nos.			
9.10	Supply, installation, testing and commissioning of Cat6A Unsheilded RJ45 connectors as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
9.11	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	120	Nos.			
10.0	Opitcal Fiber Cable Components (Make - As per approved make)					
10.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	26	Nos.			
10.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	35	Nos.			

10.3	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel-Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4	Nos.			
10.4	Supply of LC Pigtail , SM, 9/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	96	Nos.			
10.5	Supply of LC Pigtail , MM, 50/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1392	Nos.			
10.6	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	232	Nos.			
10.7	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	16	Nos.			
10.8	Supply of 24 Core OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	3000	Metres			
10.9	Supply of 12 Core OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	3000	Metres			
10.10	Supply of 6 Core OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	6000	Metres			

10.11	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12000	Metres			
10.12	Supply, laying, installation, testing and Commissioning of PVC Batten/pipes as per actual 1" (or as per requirement) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	25000	Metres			
10.13	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 50 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2500	Metres			
10.14	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 100 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2500	Metres			
10.15	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 200 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2500	Metres			
11	Equipment Racks, UPS and other accessories					
11.1	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	10	Nos.			
11.2	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	42	Nos.			
11.3	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).	3000	Metres			

11.4	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for seperate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make-APC/Emerson/Merlinzerin/Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the nessesary arrangements(Cabling and other assosories) forthe following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement . & complete in all respect. (b) Nessesary arrangement for proper earthing of UPS.</p>	2	Nos.			
12	FOC Connectivity					
12.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	3000	Metres			
12.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	50	Nos.			
12.3	Providing & fixing of Cast Iron Pipe (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	500	Metres			

12.4	Providing and laying Nos.n-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the prportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete 100 mm dia. R.C.C. pipe as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	500	Metres			
12.5	Excavating trenches of required width for pipes, cables, etc, including excavation of sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soils, and then returning the soil as required in layers Nos.t exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m: Pipes, cables etc. exceeding 80 mm dia but Nos.t exceeding 300 mm dia as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	500	Metres			
DATA CENTRE and Smart Racks						
13.00	Supply, installation, testing and Commissioning of Smart Rack Type-1 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	3	Nos..			
14.0	Preparation of DATA CENTRE for 10 Mtrs x 8 Mtrs (Approx. 80 SQM) as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	Metres			
Total for new OPD block						

PART (A - II)

<p align="center">Bill of Quantity (BOQ) for Campus Wide Network Solution (Development of Network Infrastructure for Mother and Child Block, AIIMS, NEW DELHI)</p>						
<p align="center">Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc.</p>						
Sr. Nos.	Item Description	For initial installation + 5 years warranty period				CAMC amount (in Rs.) for 5 years after warranty period of 5 years. (for the period from 6th to 10th year)
		Quantity	Unit	Rate (in Rs.)	Amount (in Rs.)	
1	2	3	4	5	6	7
Active Devices						
1	Distribution Switch-Type1 (Make - As per approved make)					
1.1	Supply, installation, testing and commissioning of Layer 3 Distribution Switch (Type-1) including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
1.2	Supply, installation, testing and commissioning of 40G QSFP LR Single Mode Fiber Transceiver (for up to 2Km) OEM make as per the requirement & complete in all respect and as directed to the satisfaction of engineer	8	Nos.			
2.0	Access Switch (Make - As per approved make)					
2.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	24	Nos.			
2.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	22	Nos.			

2.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
2.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
2.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, MMF, (for upto 300mtr.) LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	88	Nos.			
3.0	Wireless Solution (Make - As per approved make)					
3.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	180	Nos.			
3.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	2	Nos.			
Passive Devices						
4.0	CAT6 A Components (Make - As per approved make)					
4.1	Supply of Cat 6A Cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	120000	Metres			

4.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	120000	Metres			
4.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
4.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	500	Nos.			
4.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
4.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
4.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
4.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	30	Nos.			
4.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1000	Nos.			

4.10	Supply, installation, testing and commissioning of Cat6A Unshielded RJ45 connectors as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	200	Nos.			
4.11	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	100	Nos.			
5	Optical Fiber Cable Components (Make - As per approved make)					
5.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	15	Nos.			
5.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	22	Nos.			
5.3	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4	Nos.			
5.4	Supply of LC Pigtail, SM, 9/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	96	Nos.			
5.5	Supply of LC Pigtail, MM, 50/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	528	Nos.			

5.6	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	88	Nos.			
5.7	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	Nos.			
5.8	Supply of 12 core SM OS2 cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1200	Metres			
5.9	Supply of 6 core MM OM4 cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	5000	Metres			
5.10	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	6200	Metres			
5.11	Supply, laying, installation, testing and Commissioning of PVC Batten/pipes as per actual 1" (or as per requirement) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	20000	Metres			
5.12	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 50 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2000	Metres			
5.13	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 100 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2000	Metres			

5.14	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 200 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2000	Metres			
6	Equipment Racks, UPS and other accessories					
6.1	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	Nos.			
6.2	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	22	Nos.			
6.3	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).	1200	Nos.			

6.4	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for seperate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make-APC/Emerson/Merlinzerin/Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the nessesary arrangements(Cablng and other assosories) forthe following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement . & complete in all respect. (b) Nessesary arrangement for proper earthing of UPS.</p>	2	Nos.			
7	FOC Connectivity					
7.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1000	Metres			
7.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	100	Metres			
	Smart Racks					
8	Supply, installation, testing and Commissioning of Smart Rack Type-2 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specficaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	No.			
Total for mother and child block						

PART (A - III)

Bill of Quantity (BOQ) for Campus Wide Network Solution
(Development of Network Infrastructure for Surgical Block, AIIMS, NEW DELHI)

Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc.

Sr. Nos.	Item Description	For initial installation + 5 years warranty period				CAMC amount (in Rs.) for 5 years after warranty period of 5 years. (for the period from 6th to 10th year)
		Quantity	Unit	Rate (in Rs.)	Amount (in Rs.)	
1	2	3	4	5	6	7
Active Devices						
1	Distribution Switch-Type1 (Make - As per approved make)					
1.1	Supply, installation, testing and commissioning of Layer 3 Distribution Switch (Type-1) including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
1.2	Supply, installation, testing and commissioning of 40G QSFP LR Single Mode Fiber Transceiver (for up to 2Km) OEM make as per the requirement & complete in all respect and as directed to the satisfaction of engineer	8	Nos.			
2	Access Switch (Make - As per approved make)					
2.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12	Nos.			
2.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
2.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			

2.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	11	Nos.			
2.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, MMF, (for upto 300mtr.) LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	50	Nos.			
3	Wireless Solution (Make - As per approved make)					
3.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	70	Nos.			
3.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	4	Nos.			
Passive Components						
4	CAT6 A Components (Make - As per approved make)					
4.1	Supply of Cat 6A Cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	48000	Metres			
4.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	48000	Metres			
4.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	300	Nos.			

4.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	300	Nos.			
4.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	Nos.			
4.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	Nos.			
4.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	Nos.			
4.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	30	Nos.			
4.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	800	Nos.			
4.1	Supply, installation, testing and commissioning of Cat6A Unsheilded RJ45 connectors as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	200	Nos.			
4.1	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	40	Nos.			
5	Optical Fiber Cable Components (Make - As per approved make)					
5.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	Nos.			

5.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	15	Nos.			
5.3	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4	Nos.			
5.4	Supply of LC Pigtail, SM, 9/125 , 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	96	Nos.			
5.5	Supply of LC Pigtail, MM, 50/125 , 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	312	Nos.			
5.6	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	52	Nos.			
5.7	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	Nos.			
5.8	Supply of 12 core SM OS2 cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1500	Metres			
5.90	Supply of 6 core MM OM4 cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2500	Metres			

5.10	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4000	Metres			
5.11	Supply, laying, installation, testing and Commissioning of PVC Batten/pipes as per actual 1" (or as per requirement) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8000	Metres			
5.12	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 50 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1600	Metres			
5.13	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 100 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1600	Metres			
5.16	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 200 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1600	Metres			
6	Equipment Racks, UPS and other accessories					
6.1	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
6.2	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	13	Nos.			
6.3	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).	1500	Nos.			

6.4	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for separate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make- APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the necessary arrangements(Cabling and other accessories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement & complete in all respect. (b) Necessary arrangement for proper earthing of UPS.</p>	2	Nos.			
7	FOC Connectivity					
7.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1000	Metres			
7.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	100	Metres			
8	Smart Racks					
8.1	Supply, installation, testing and Commissioning of Smart Rack Type-2 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
Total for Surgical block						

PART (A - IV)

Bill of Quantity (BOQ) for Campus Wide Network Solution

(Development of Network Infrastructure for NCI, Jhajjar) (Work will be awarded in phases. The actual quantities may vary)

Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc. for establishment of Wired & Wi-Fi System

Sr. Nos.	Item Description	For initial installation + 5 years warranty period				CAMC amount (in Rs.) for 5 years after warranty period of 5 years. (for the period from 6th to 10th year)
		Quantity	Unit	Rate (in Rs.)	Amount (in Rs.)	
1	2	3	4	5	6	7
Active Devices						
1	Core Switch and Distribution Switch (Make - As per approved make)					
1.1	Supply, installation, testing and commissioning of Core Switch as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer along with 24X7 support and 5 year comprehensive warranty	2	Nos.			
1.2	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-1 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	3	Nos.			
1.3	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type- 2 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	14	Nos.			
1.4	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-4 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			

1.5	Supply, installation, testing and commissioning of 100G BASE-LR, OPTICAL (LC) for upto 10 Km SMF Module for the core switch and associated patch cords and other accessories for the 100 G connectivity as per the requirement & complete in all respect and as directed to the satisfaction of engineer	4	Nos.			
1.6	Supply, installation, testing and commissioning of 40G QSFP Direct attach cable 1 mtr OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	10	Nos.			
1.7	Supply, installation, testing and commissioning of 40G QSFP Single Mode Fiber Transceiver (for up to 2Km) OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	75	Nos.			
2	Access Switch (Make - As per approved make)					
2.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	70	Nos.			
2.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	50	Nos.			
2.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	70	Nos.			
2.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	150	Nos.			
2.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	420	Nos.			

2.6	Supply, installation, testing and commissioning of 10G BASE-LR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer	120	Nos.			
3	Wireless Solution (Make - As per approved make)					
3.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	1600	Nos.			
3.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	20	Nos.			
3.3	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	1	No.			
4	Network Management Solution (NMS) (Make - As per approved make)					
4.1	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
5	Network Access Control (NAC) Solution					
5.1	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
6	Firewall Appliance (Make - As per approved make)					

6.1	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscription includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
7	Server Hardware (Make - As per approved make)					
7.1	Supply, installation, testing and commissioning of Server Hardware as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
7.2	Supply, installation, testing, commissioning and integration of Certified Linux Operating System with VMWare virtualization for running NAC and NMS as per technical specification mentioned with 5 years comprehensive support warranty as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
Passive Components						
8	CAT6 A Components (Make - As per approved make)					
8.1	Supply of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	480000	Metres			
8.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	480000	Metres			
8.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1000	Nos.			
8.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2500	Nos.			
8.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	5800	Nos.			

8.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	8000	Nos.			
8.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	5800	Nos.			
8.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	100	Nos.			
8.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	100	Nos.			
8.10	Supply, installation, testing and commissioning of Cat6A Unsheilded RJ45 connectors as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2500	Nos.			
8.11	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	490	Nos.			
9	Opitcal Fiber Cable Components (Make - As per approved make)					
9.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	60	Nos.			
9.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	110	Nos.			
9.3	Supply, installation, testing and commissioning of 12 port SM LC LIU Fibre Panel- Unloaded for Hostel as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30	Nos.			

9.4	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel-Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	48	Nos.			
9.5	Supply of LC Pigtail, SM, 9/125, 900 micron as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1512	Nos.			
9.6	Supply of LC Pigtail, MM, 50/125, 900 micron as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2760	Nos.			
9.7	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	460	Nos.			
9.8	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	252	Nos.			
9.9	Supply of 24 Core OS2 FOC cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1000	Metres			
9.10	Supply of 12 Core OS2 FOC cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	17600	Metres			
9.11	Supply of 6 Core OS2 FOC cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	15000	Meters			

9.12	Supply of 6 Core OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	43000	Metres			
9.13	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	116600	Metres			
9.14	Supply, laying, installation, testing and Commissioning of PVC Batten/pipes as per actual 1" (or as per requirement) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	80000	Metres			
9.15	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 50 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8000	Metres			
9.16	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 100 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8000	Metres			
9.17	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 200 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8000	Metres			
10	Equipment Racks, UPS and other accessories					
10.1	Supply, installation, testing and Commissioning of 19" Rack 9 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30	Nos.			
10.2	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30	Nos.			

10.3	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	100	Nos.			
10.4	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).	33600	Nos.			
10.5	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for separate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make- APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the necessary arrangements(Cabling and other accessories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments etc. & complete in all respect. (b) Necessary arrangement for proper earthing of UPS.</p>	14				

10.6	<p>1. Supply, Installation, Testing, Commissioning of 30 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for seperate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make-APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the nessesary arrangements(Cabling and other assosories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement & complete in all respect. (b) Nessesary arrangement for proper earthing of UPS.</p>	4				
11	FOC Connectivity					

11.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	23520	Metres			
11.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	100	Nos.			
11.3	Providing & fixing of Cast Iron Pipe (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	500	Nos.			
11.4	Providing and laying Nos.n-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the prportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete 100 mm dia. R.C.C. pipe as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	500	Nos.			
11.5	Excavating trenches of required width for pipes, cables, etc, including excavation of sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soils, and then returning the soil as required in layers Nos.t exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m: Pipes, cables etc. exceeding 80 mm dia but Nos.t exceeding 300 mm dia as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	500	Metres			
DATA CENTRE and Samrt Racks						
12	Supply, installation, testing and Commissioning of Smart Rack Type-1 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specifacaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	Nos.			
13	Supply, installation, testing and Commissioning of Smart Rack Type-2 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specifacaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	18	Nos.			

14	Preparation of DATA CENTRE (DC-1) for 10 Mtrs x 10 Mtrs (Approx. 100 SQM) as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
15	Preparation of DATA CENTRE (DC-2) for 10 Mtrs x 8 Mtrs (Approx. 80 SQM) as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No.			
Total for NCI Jhajjar						

Unit rates for Bill of Quantity (BOQ) for Campus Wide Network Solution			
Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc. for establishment of Wired & Wi-Fi System			
Sr. Nos.	Item Description	Rate (in Rs.)	Rate (In words)
1	2	3	4
Active Devices			
1	Core Switch and Distribution Switch (Make - As per approved make)		
1.1	Supply, installation, testing and commissioning of Core Switch as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer along with 24X7 support and 5 year comprehensive warranty		
1.2	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-1 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.3	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type- 2 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.4	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-3 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.5	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-4 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.6	Supply, installation, testing and commissioning of 100G BASE-LR, OPTICAL (LC) for upto 10 Km SMF Module for the core switch and associated patch cords and other accessories for the 100 G connectivity as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
1.7	Supply, installation, testing and commissioning of 40G QSFP Direct attach cable 1 mtr OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		

1.8	Supply, installation, testing and commissioning of 40G QSFP Multi Mode Fiber Transceiver as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
1.9	Supply, installation, testing and commissioning of 40G QSFP LR Single Mode Fiber Transceiver (for up to 2Km) OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
2	Access Switch (Make - As per approved make)		
2.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
2.6	Supply, installation, testing and commissioning of 10G BASE-LR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
3.0	Wireless Solution (Make - As per approved make)		
3.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer		
3.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer		

3.3	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer (For AIIMS Masjid Moth Campus)		
3.4	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer (For NCI Campus)		
4.0	Network Management Solution (NMS) (Make - As per approved make)		
4.1	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		
4.2	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
5.0	Network Access Control (NAC) Solution		
5.1	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		
5.2	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
6.0	Firewall Appliance (Make - As per approved make)		
6.1	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscrption includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		

6.2	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscription includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
7.0	Server Hardware (Make - As per approved make)		
7.1	Supply, installation, testing and commissioning of Server Hardware as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
7.2	Supply, installation, testing, commissioning and integration of Certified Linux Operating System with VMWare virtualization for running NAC and NMS as per technical specification mentioned with 5 years comprehensive support warranty as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
Passive Components			
8.0	CAT6 A Components (Make - As per approved make)		
8.1	Supply of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		

8.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
8.10	Supply, installation, testing and commissioning of Cat6A Unsheilded RJ45 connectors as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.11	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.0	Opital Fiber Cable Components (Make - As per approved make)		
9.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.3	Supply, installation, testing and commissioning of 12 port SM LC LIU Fibre Panel- Unloaded for Hostel as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.4	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel- Unloaded as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.5	Supply of LC Pigtail, SM, 9/125, 900 micron as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

9.6	Supply of LC Pigtail, MM, 50/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.7	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.8	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.9	Supply of 24 Core OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.10	Supply of 12 Core SM OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.11	Supply of 6 Core SM OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.12	Supply of 6 Core MM OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.13	Supply of 12 Core MM OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.14	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.15	Supply, laying, installation, testing and Commissioning of PVC Batten/pipes as per actual 1" (or as per requirement) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

9.16	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 50 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.17	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 100 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.18	Supply, laying, installation, testing and Commissioning of Cable tray (closed) (size as per the requirement -for 200 cables) with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.0	Equipment Racks, UPS and other accessories		
10.1	Supply, installation, testing and Commissioning of 19" Rack 9 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.2	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.3	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.4	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).		

10.5	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for seperate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 year OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make- APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the nessesary arrangements(Cabling and other assosories) forthe following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments etc. & complete in all respect. (b) Nessesary arrangement for proper earthing of UPS.</p>		
10.6	<p>1. Supply, Installation, Testing, Commissioning of 30 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for seperate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make-APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the nessesary arrangements(Cabling and other assosories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement & complete in all respect. (b) Nessesary arrangement for proper earthing of UPS.</p>		
11.0	FOC Connectivity		
11.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

11.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.		
11.3	Providing & fixing of Cast Iron Pipe (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.		
11.4	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete 100 mm dia. R.C.C. pipe as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.5	Excavating trenches of required width for pipes, cables, etc, including excavation of sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soils, and then returning the soil as required in layers not exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m: Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.6	Supply, installation, testing and Commissioning of Smart Rack Type-1 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.7	Supply, installation, testing and Commissioning of Smart Rack Type-2 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
	DATA CENTRE		
12.00	Preparation of DATA CENTRE (DC-1) for 10 Mtrs x 10 Mtrs (Approx. 100 SQM) as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
13.0	Preparation of DATA CENTRE (DC-2) for 10 Mtrs x 8 Mtrs (Approx. 80 SQM) as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

Item wise breakup						Appendix 1
Core Switch (Refer BOQ Sr. No 1.1 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of core switch (In Rs.)						0.00
Distribution Switch TYPE-1 (Refer BOQ Sr. No 1.2 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00

9						0.00
10						0.00
Total amount of Switch TYPE - 1 (In Rs.)						0.00
Distribution Switch Type-2 (Refer BOQ Sr. No 1.3 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of Switch TYPE - 2 (In Rs.)						0.00
Distribution Switch Type-3 (Refer BOQ Sr. No 1.4 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00

4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of Distribution Switch TYPE - 3 (In Rs.)						0.00
Distribution Switch Type-4 (Refer BOQ Sr. No 1.5 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of Distribution Switch TYPE - 4 (In Rs.)						0.00

Server Hardware (Refer BOQ Sr. No 7.1 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of Server Hardware (In Rs.)						0.00
Smart Rack- Type-1 (Refer BOQ Sr. No. 11.6 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00

8						0.00
9						0.00
10						0.00
Total amount of Smart Rack Type-1 (In Rs.)						0.00
Smart Rack- Type-2 (Refer BOQ Sr. No. 11.7 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount Smart Rack- Type-2 (In Rs.)						0.00
DATA CENTRE (10 Mtrs x 10 Mtrs) - NCI Jhajjar (Refer BOQ Sr. No. 12.0 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00

5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of DATA CENTRE (10 Mtrs x 10 Mtrs) - NCI Jhajjar in (In Rs.)						0.00
DATA CENTRE (10 Mtrs x 8 Mtrs)- New OPD & NCI Jhajjar (Refer BOQ Sr. No. 13.0 of Master Rate Sheet)						
Sr. Nos.	Item Description	Unit	Quantity	Rate (in Rs.)	Rate (Rs. in words)	Amount (in Rs.)
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
Total amount of DATA CENTRE (10 Mtrs x 8 Mtrs)- New OPD & NCI Jhajjar (In Rs.)						0.00

Part B: Comprehensive Onsite Operation, Maintenance and support services

Comprehensive Maintenance for the Network Infrastructure for 1st, 2nd, 3rd, 4th and 5th years only- The comprehensive maintenance includes spare parts & manpower for all equipments, hardware, software, network equipments and cables, maintenance. Scope of work for maintenance including minimum manpower requirement mentioned in Volume-IV.

Sr. Nos.	Item Description	Amount (in Rs.)	Amount (in words)
1	New OPD block		
1.1	Comprehensive Onsite Operation, Maintenance and support services for 1st year		
1.2	Comprehensive Onsite Operation, Maintenance and support services for 2nd year		
1.3	Comprehensive Onsite Operation, Maintenance and support services for 3rd year		
1.4	Comprehensive Onsite Operation, Maintenance and support services for 4th year		
1.5	Comprehensive Onsite Operation, Maintenance and support services for 5th year		
Total for New OPD block		0.00	
S.No	Description	Amount (in Rs.)	Amount (in words)
2	Mother and child block		
2.1	Comprehensive Onsite Operation, Maintenance and support services for 1st year		
2.2	Comprehensive Onsite Operation, Maintenance and support services for 2nd year		
2.3	Comprehensive Onsite Operation, Maintenance and support services for 3rd year		
2.4	Comprehensive Onsite Operation, Maintenance and support services for 4th year		
2.5	Comprehensive Onsite Operation, Maintenance and support services for 5th year		

Total for mother and child block		0.00	
S.No			
Description		Amount (in Rs.)	Amount (in words)
3	Surgical block		
3.1	Comprehensive Onsite Operation, Maintenance and support services for 1st year		
3.2	Comprehensive Onsite Operation, Maintenance and support services for 2nd year		
3.3	Comprehensive Onsite Operation, Maintenance and support services for 3rd year		
3.4	Comprehensive Onsite Operation, Maintenance and support services for 4th year		
3.5	Comprehensive Onsite Operation, Maintenance and support services for 5th year		
Total for surgical block		0.00	
S.No			
Description		Amount (in Rs.)	Amount (in words)
4	NCI Jhajjar		
4.1	Comprehensive Onsite Operation, Maintenance and support services for 1st year		
4.2	Comprehensive Onsite Operation, Maintenance and support services for 2nd year		
4.3	Comprehensive Onsite Operation, Maintenance and support services for 3rd year		
4.4	Comprehensive Onsite Operation, Maintenance and support services for 4th year		
4.5	Comprehensive Onsite Operation, Maintenance and support services for 5th year		
Total for NCI Jhajjar		0.00	

Part C: Bill of Quantity for Comprehensive Maintenance and support services - from 6 to 10 years

***The Quoted Rate in Part -C shall become a part of financial bid but shall not be considered for the purpose of evaluation of the Financial bids of the bidders.**

Comprehensive Maintenance and support services for the Network Infrastructure for 6th, 7th, 8th, 9th and 10th years only - Comprehensive Maintenance up to Five (5) years already covered in the existing scope of work under Part B. The comprehensive maintenance and support services includes spare parts & manpower, hardware, software, network equipments and cables, maintenance and onsite support. The employer reserves the right for placement of order for this maintenance work. However the quoted rate by the bidder shall remain binding on the bidder. The BOQ item shall be read in conjunction with technical specification, GCC, SCC and their quoted rate shall deemed to include all works/requirement in the technical specification, SCC, GCC etc. and Scope of work for maintenance including minimum manpower requirement mentioned in Volume-IV and the quoted amount in this part should not include the amount, liabilities, povision already covered in Part B.

S.Nos.	Item Description	Amount (in Rs.)	Amount (Rs. in words)
1	New OPD Block	0.00	
2	Mother and Child Block	0.00	
3	Surgical Block	0.00	
4	NCI Jhajjar Campus	0.00	
	Total (PART-C)	0.00	
Total for (Part C) in words			

Bill of Quantity (BOQ) for Campus Wide Network Solution			
Work to be executed as per Scope of work, Technical Specification, drawings, tender's terms and conditions etc.			
Sr. Nos.	Item Description	Replacement rate for parts (in Rs.)	Rate(Rs. in words)
1	2		
Active Devices			
1	Core Switch and Distribution Switch (Make - As per approved make)		
1.1	Supply, installation, testing and commissioning of Core Switch as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer along with 24X7 support and 5 year comprehensive warranty		
1.2	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-1 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.3	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type- 2 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.4	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-3 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.5	Supply, installation, testing and commissioning of Layer 3 Distribution Switch Type-4 including 5 years comprehensive warranty and 24X7 support with advance replacement for the distribution switch as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
1.6	Supply, installation, testing and commissioning of 100G BASE-LR, OPTICAL (LC) for upto 10 Km SMF Module for the core switch and associated patch cords and other accessories for the 100 G connectivity as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
1.7	Supply, installation, testing and commissioning of 40G QSFP Direct attach cable 1 mtr OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
1.8	Supply, installation, testing and commissioning of 40G QSFP Multi Mode Fiber Transceiver as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
1.9	Supply, installation, testing and commissioning of 40G QSFP Single Mode Fiber Transceiver (for up to 2Km) OEM make for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		

2	Access Switch (Make - As per approved make)		
2.1	Supply, installation, testing and commissioning of 48-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.2	Supply, installation, testing and commissioning of 48-port POE+ Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.3	Supply, installation, testing and commissioning of 24-port Access Switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.4	Supply, installation, testing and commissioning of 24-port POE+ switch with 5 years comprehensive warranty and support as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
2.5	Supply, installation, testing and commissioning of 10G BASE-SR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
2.6	Supply, installation, testing and commissioning of 10G BASE-LR, SFP+ optic, LC Connector optical monitoring capable for core switch as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
3.0	Wireless Solution (Make - As per approved make)		
3.1	Supply, installation, testing and commissioning of Wireless Access Point (Indoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer		
3.2	Supply, installation, testing and commissioning of Wireless Access Point (Outdoor) with Power over Ethernet Adapter (100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and 5 years comprehensive warranty as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer		
3.3	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer (For AIIMS Masjid Moth Campus)		
3.4	Supply, installation, testing and commissioning of Wireless Access Controller for above mentioned Wireless Access Points with 5 years comprehensive warranty, support and updates as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer (For NCI Campus)		
4.0	Network Management Solution (NMS) (Make - As per approved make)		

4.1	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		
4.2	Supply, installation, testing and commissioning of NMS solution with minimum of 5 years support is required and 24X7 support for the software as per requirement and as per technical specification mentioned & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
5.0	Network Access Control (NAC) Solution		
5.1	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		
5.2	Supply, installation, testing and commissioning of NAC solution as per the technical specificaton mentioned as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
6.0	Firewall Appliance (Make - As per approved make)		
6.1	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscrption includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For AIIMS Masjid Moth Campus)		
6.2	Supply, installation, testing and commissioning of Appliance based Firewall with internal/external IPS/IDS with 5 years subscrption includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 2500 users or more as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer. (For NCI Campus)		
7.0	Server Hardware (Make - As per approved make)		
7.1	Supply, installation, testing and commissioning of Server Hardware as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
7.2	Supply, installation, testing, commissioning and integration of Certified Linux Operating System with VMWare virtualization for running NAC and NMS as per technical specification mentioned with 5 years comprehensive support warranty as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
Passive Components			
8.0	CAT6 A Components (Make - As per approved make)		

8.1	Supply of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.2	Laying, testing and commissioning of Cat 6A Cable as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.3	Supply, installation, testing and commissioning of Face Plate 1 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.4	Supply, installation, testing and commissioning of Face Plate 2 Port - White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.5	Supply, installation, testing and commissioning of Cat6A RJ45 Sheilded Jack as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.6	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 1 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.7	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 2 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.8	Supply, installation, testing and commissioning of Cat 6A Patch/Mounting Cord 3 mtrs as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.9	Supply, installation, testing and commissioning of GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
8.10	Supply, installation, testing and commissioning of Cat6A Unsheilded RJ45 connectors as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer		
8.11	Supply, installation, testing and commissioning of 24 Port loaded Patch Panel including adapters etc. as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.0	Optical Fiber Cable Components (Make - As per approved make)		

9.1	Supply, installation, testing and commissioning of 24 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.2	Supply, installation, testing and commissioning of 12 port MM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.3	Supply, installation, testing and commissioning of 12 port SM LC LIU Fibre Panel- Unloaded for Hostel as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.4	Supply, installation, testing and commissioning of 24 port SM LC LIU Fibre Panel- Unloaded as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.5	Supply of LC Pigtail, SM, 9/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.6	Supply of LC Pigtail, MM, 50/125, 900 micron as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.7	Supply, installation, testing and commissioning of LC-LC, 50/125, OM4 Multimode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.8	Supply, installation, testing and commissioning of LC-LC, 9/125 OS2 Singlemode, 3 Mtrs Patchcord as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.9	Supply of 24 Core OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.10	Supply of 12 Core OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.11	Supply of 6 Core OS2 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.12	Supply of 6 Core OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

9.13	Supply of 12 Core OM4 FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
9.14	Laying, testing and commissioning of FOC cable as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.0	Equipment Racks, UPS and other accessories		
10.1	Supply, installation, testing and Commissioning of 19" Rack 9 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.2	Supply, installation, testing and Commissioning of 19" Rack 12 U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.3	Supply, installation, testing and Commissioning of 19" Rack 15U Wall Mount Rack with all standard accessories that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
10.4	Supply, excavation up to 3 feet of 40mm HDPE Pipe (Standard ISI mark) as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).		
10.5	<p>1. Supply, Installation, Testing, Commissioning of 20 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for separate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 year OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make- APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the necessary arrangements(Cabling and other accessories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments etc. & complete in all respect. (b) Necessary arrangement for proper earthing of UPS.</p>		

10.6	<p>1. Supply, Installation, Testing, Commissioning of 30 KVA true Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with input pf 0.98 and minimum 95% overall efficiency and THDI less than 5% on non linear loads including accessories and suitable Power Management software in UPS including IGBT/PWM technology based inverter, automatic bi-directional static switch, manual bypass switch, galvanic isolation transformer with UPS by pass has to be terminated before the isolation transformer in the UPS out-put path, input phase reversal protection, provision for separate input for rectifier and for bypass. UPS should be with three phase input & three phase output complete as required. UPS should give MODBUS RS 485 integration with IBMS with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (make-APC / Emerson / Merlinzerin / Eaton Powerware)</p> <p>2. Supply, Installation, Testing, Commissioning of Rack mounted external battery bank of 12 volt SMF batteries for a total of 30 mins backup for ups on full resistive load with all the accessories etc. and 5 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. Agency also to be made all the necessary arrangements(Cabling and other accessories) for the following: (a) Providing UPS supply to all the computers, printers, network switches, servers and other IT equipments as per the requirement & complete in all respect. (b) Necessary arrangement for proper earthing of UPS.</p>		
11.0	FOC Connectivity		
11.1	Providing Trenchless method after Ultrasonic Survey as per the industry standard as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.2	Providing & fixing of each manhole required at turn of cable (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.		
11.3	Providing & fixing of Cast Iron Pipe (Standard ISI mark) as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.		
11.4	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete 100 mm dia. R.C.C. pipe as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.5	Excavating trenches of required width for pipes, cables, etc, including excavation of sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soils, and then returning the soil as required in layers not exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m: Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
11.6	Supply, installation, testing and Commissioning of Smart Rack Type-1 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		

11.7	Supply, installation, testing and Commissioning of Smart Rack Type-2 with all standard accessories that include Cable Manager, Power Bar with sockets, cooling provision etc. as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
DATA CENTRE			
12.00	Preparation of DATA CENTRE (DC-1) for 10 Mtrs x 10 Mtrs (Approx. 100 SQM) as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		
13.0	Preparation of DATA CENTRE (DC-2) for 10 Mtrs x 8 Mtrs (Approx. 80 SQM) as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.		