

TENDER SPECIFICATION

Note: * All Equipments should be from the same vendor.

* Please mention the name of brand with technical specification Catalogue of both active components and UTM appliance

* Please see the eligibility criteria on last

* Company is responsible to provide and setup network at Regional Campuses Jalandhar, Gurdaspur, sathiala and Niari

Active Components

Distribution Switch

Quantity - 2 Nos.

S. No.	Feature	Description
1.	Port density capability	<ul style="list-style-type: none">▪ 12 x SFP Slots▪ 1 x Stacking port (stack upto 9 switch)
2.	Memory	<ul style="list-style-type: none">▪ 128 MB DRAM▪ 16 MB Flash Memory
3.	Switch Fabric capacity	<ul style="list-style-type: none">▪ 32 Gbps stacking bandwidth▪ Minimum 32 Gbps Switching Fabric▪ Forwarding Rate based on 64 byte packets should be at least 17 Mbps
4.	MAC Address Support	<ul style="list-style-type: none">▪ Should be configurable upto 12,000 MAC address▪ Should be configurable upto 1000 IGMP groups▪ MTU upto 9000 bytes with a maximum Ethernet frame size of 9018 bytes for bridging on Gig ports▪ Should be configurable upto 20,000 unicast routes
5.	VLAN support	<ul style="list-style-type: none">▪ Central VLAN configuration▪ IEEE 802.1Q VLAN▪ 255 VLANs▪ Minimum 4000 VLAN IDs
6.	Switching services	<ul style="list-style-type: none">▪ L3 Switching , L2 – L4 services▪ DHCP relay & Server▪ Per-port broadcast, multicast, and storm control prevents
7.	Provide protocols	<ul style="list-style-type: none">▪ IEEE 802.1q, 802.1p, 802.1D, 802.3x, 802.3ad, 802.1w,▪ IGMP v1, v2, v3 ; IPv4; SNMP v3▪ Support for IPv6, OSPF, BGPv4, PIM – SM and PIM-DM▪ Shall support full dynamic IP routing
8.	Management	<ul style="list-style-type: none">▪ Web View, Telnet, SNMP, Console, RMON, Time-domain reflectometer (TDR), UDLD, Layer 2 trace route eases troubleshooting
9.	Availability & Scalability	<ul style="list-style-type: none">▪ IEEE 802.1w Rapid Spanning Tree Protocol▪ Per-VLAN Rapid Spanning Tree Plus (PVRST+)▪ Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD▪ Bandwidth aggregation up to 8 Gbps▪ Shall support Link aggregation control protocol (LACP)▪ Egress committed rate (ECR)▪ Internet Group Management Protocol (IGMP) version 3 snooping▪ Multicast VLAN registration (MVR)▪ Supports switch port auto recovery to re-enable link that is disabled after a network error.▪ Shall support VRRP/HSRP▪ Support redundant power supply.
10.	QOS	<ul style="list-style-type: none">▪ 802.1p prioritization with minimum of four priority queues for support of critical applications like Voice/IP telephony▪ L2,L3,L4 traffic classification▪ Strict priority queuing, Weighted Fair Queuing and Rate Limiting▪ Control-plane and data-plane ACLs support on all ports to ensure proper treatment on a per-packet basis▪ Support up to 64 aggregate or individual polices per port▪ Rate limiting based on source and destination IP address, source and

		<p>destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs or MAC ACLs), class maps, and policy maps.</p> <ul style="list-style-type: none"> ▪ Support for Weighted tail drop (WTD) for congestion avoidance at the ingress and egress queues before a disruption occurs. ▪ Four egress queues per port enable differentiated management of up to four traffic types ▪ Strict priority queuing
11.	Technology support	<ul style="list-style-type: none"> ▪ IEEE 802.1s, IEEE 802.1w, IEEE 802.1x, IEEE 802.3ad ▪ IEEE 802.3ah (100BASE-X single/multimode fiber only) ▪ IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports ▪ IEEE 802.1D Spanning Tree Protocol ▪ IEEE 802.1p CoS Prioritization, IEEE 802.1Q VLAN ▪ IEEE 802.3 af ▪ IEEE 802.3 10BASE-T specification ▪ IEEE 802.3u 100BASE-TX specification ▪ IEEE 802.3ab 1000BASE-T specification ▪ IEEE 802.3z 1000BASE-X specification
12.	Security	<ul style="list-style-type: none"> ▪ 802.1x ▪ ACLs based on source and destination MAC addresses, IP addresses, or TCP/User Datagram Protocol (UDP) ports, VLAN ACLs ▪ Users can be assigned a VLAN upon authentication, ▪ Spanning-Tree Root Guard ▪ Multilevel security on console access ▪ SSHv2, SNMP v3, SSH v2 ▪ RADIUS and TACACS+ authentication ▪ Support Upto 2000 access control entries

Access Switches (Manageable)

S.No.	Number of ports	Other features	Quantity
1	48	10/100 2 dual purpose ports(10/100/1000 or SFP)	05
2	24	10/100 2 dual purpose ports(10/100/1000 or SFP)	02
3	16	10/100 1 to 2 dual purpose ports(10/100/1000 or SFP)	05
4	8	10/100 1 dual purpose port(10/100/1000 or SFP)	04
5	24 POE	10/100 2 dual purpose port(10/100/1000 or SFP) 370W POE power	03
6.	8 POE	10/100 1 dual purpose port(10/100/1000 or SFP)	03

The above access switches with essential software must have following features:

S.No.	Feature	Description
1	Forwarding bandwidth	Upto 16 Gbps

2	Flash memory	32 MB or higher
3	Memory DRAM	64 MB
4	Max VLANs	64
5	VLAN IDs	3000 or higher
6	Maximum transmission unit (MTU)	Up to 9198 bytes
7	Voltages and Power Rating	100 to 240 VAC
8	Connectors and Cabling and Indicators	<ul style="list-style-type: none"> • 10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling • 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling • 1000BASE-SX, -LX/LH SFP-based ports: LC fiber connectors (single- and multimode fiber) • 100Base-FX: LC fiber connectors (single- and multimode fiber)

Wireless Access Points

Quantity – 54 Nos.

S.No.	Features	Description
1.	Features	<ul style="list-style-type: none"> • Provides up to 108 Mbps of capacity in a single device • Should be a dual band operable wireless access point. • Should comply with 802.11a/b/g standards for interoperability with any Wi-Fi-compliant client • Should have integrated internal antennas. • Should support management frame protection. • Should be Power-over-Ethernet (POE) capable • Should support 15 non-overlapping channels • Should have variable transmit power settings
2.	Wireless Protocol	<ul style="list-style-type: none"> • Should work in multi-radio platform to handle interference as well as self-interference, optimize system-level network performance • Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)
3.	Security	<ul style="list-style-type: none"> • Should have hardware-based AES encryption • Should have MAC address authentication • Should have MAC address filtering • Should support 802.11i, 802.1x, TKIP-MIC, WPA2, and WPA. Also EAP types like SIM, PEAP, TLS, TTLS • IEEE 802.11 WEP keys of 40 bits and 128 bits
4.	QoS	<ul style="list-style-type: none"> • Should provide differentiated services for high-priority traffic. • Should enable public safety and enterprise voice over IP (VoIP) and video applications
5.	Data Rates and Modulation	<ul style="list-style-type: none"> • 802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9, 6, 5.5, 2, 1 Mbps
6.	Non-Overlapping Channels	<ul style="list-style-type: none"> • 802.11a: Upto 19 channels • 802.11b/g: Upto 3 channels
7.	Network Interface	<ul style="list-style-type: none"> • 802.3u 10/100 Ethernet, auto-sensing
8.	Antennas	<ul style="list-style-type: none"> • 2.4 GHz <ul style="list-style-type: none"> ○ Gain 3.0 dBi ○ Horizontal Beamwidth 360° • 5 GHz <ul style="list-style-type: none"> ○ Gain 4.5 dBi ○ Horizontal Beamwidth 360°
9.	Memory	<ul style="list-style-type: none"> • Minimum 32 MB RAM

		<ul style="list-style-type: none"> • Minimum 16 MB FLASH
10.	Receive Sensitivity	<ul style="list-style-type: none"> • 802.11a <ul style="list-style-type: none"> 6 Mbps: -87 dBm 9 Mbps: -86 dBm 12 Mbps: -85 dBm 18 Mbps: -84 dBm 24 Mbps: -80 dBm 36 Mbps: -78 dBm 48 Mbps: -73 dBm 54 Mbps: -71 dBm • 802.11g <ul style="list-style-type: none"> 1 Mbps: -93 dBm 2 Mbps: -91 dBm 5.5 Mbps: -88 dBm 6 Mbps: -86 dBm 9 Mbps: -85 dBm 11 Mbps: -85 dBm 12 Mbps: -84 dBm 18 Mbps: -83 dBm 24 Mbps: -79 dBm 36 Mbps: -77 dBm 48 Mbps: -72 dBm 54 Mbps: -70 dBm

Passive Components

A. GENERAL

1. SUMMARY

This document covers the design, installation and commissioning of a Campus Wide Networking constituting of the following;

- 1) Fiber cabling terminations.
 - 2) Terminal blocks/cross-connect systems.
 - 3) Equipment racks and cabinets.
 - 4) System testing.
 - 5) Terminal blocks and cross-connects.
 - 6) Documentation and submissions.
- a. Provide all equipment, materials, labor, and services, not specifically mentioned or shown, which may be necessary to complete or perfect all parts of the installation. Ensure that they are in compliance with requirements stated or reasonably inferred by the contract documents.
 - b) Civil work will be done by contractor or its authorized representatives.
 - c) Contractor should do site visit and survey estimate all civil work and verify quantities.

The Structured Cabling System shall support:

Analogue and digital voice applications, data, local area networks (LAN), video and low voltage devices for building controls and management of the common cabling platform.

Patch Panel

- Patch Panel should be modular/unloaded one to confirming the standard to fit RJ45 socket as when use.
- It should be available in 16 and 24 ports respectively fitting on 19" rack.
- Patchpanel must have a Rear cable management and this should only occupy the same area as the panel.
- Patchpanel must be supplied with paper labels for station identification and ID tabs for individual port identification.
- Safety Rating: UL tested

UTP Patch Cords

UTP patch leads shall provide the interconnection between horizontal and vertical cabling and active devices at the cross connect facilities. In view of the dynamic nature of patching over the life of the Structured Cabling System, only products with highest quality and reliability shall be supplied. No patch lead shall be manufactured, assembled or fabricated on site. All patch leads shall be factory terminated and tested, under controlled conditions.

The UTP patch leads shall be manufactured from Cat6, 4 pair stranded UTP cable and terminated with Cat6 RJ45 plugs.

The UTP patch leads shall comply to the following performance characteristics:
NEXT loss performance shall fall within the range of 27dB and 30dB at 100MHz for pairs terminated on pins 4, 5 & 3, 6 and above 27dB for all other pair combinations. Attenuation shall be no more than +50% per meter above that specified for the equivalent solid UTP cable in EIA/TIA 568A.
8 wire non keyed RJ45 plug.

Fiber Optic Cable OM3 Multimode.

6/12 Core OM3 Outdoor Steel Tape Armoured Cable should meet the following specifications

The optical fiber cable shall meet the following specification:

Should have dual PE jackets, one outside & other inside the corrugated steel tape
Corrugated Steel Tape armour suitable for direct burial
Gel filled with multiple loose tubes
250 micron coated fibers
Nominal cable dia 14.5 – 15 mm

Physical

Tension Rating (installation)	3000N
Minimum Bend Radius	20X cable diameter (during installation) 10X cable diameter (installed)
Installation Temperature	0°C to 70°C
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +70°C

Optical fiber Patch cords

All optical fiber patching panel shall provide cross-connect, inter-connect, splicing capabilities and contain cable management for supporting and routing the optical fiber cables/jumpers.

Cable	2 Fiber Pin code cord
Outside Diameter	3.0 mm x 6.0 mm
Buffer Diameter	900 µm tight buffer

Fiber Coating Diameter	250 μ m or 500 μ m
Strength Member	Aramid Yarn
Min. Bend Radius	4.5 cm
Max. Bend Radius	211 cm
Core/Clad O.D.	8.3 \pm 0.5 μ m / 125 \pm 2.0 μ m
Mode Field Diameter	9.3 \pm 0.5 μ m
Max Attenuation	□ 1.0 dB/km @ 1310 nm □ 1.0 dB/km @ 1550 nm
Zero Dispersion Wavelength	1300 nm to 1324 nm
Cutoff Wavelength	1260 +/- 70 nm
Max. Dispersion	3.2 psec/nm-km @ 1310 nm 18.0 psec/nm-km @ 1550 nm

2. DOCUMENTATION

- a. Network Design Document (NDD) including details of the components being used, design methodologies and the final Bill of Materials for this project.
- b. Product Data: Provide catalog cut sheets and information for the following:
 - 1) Wire, cable, and optical fiber.
 - 2) Outlets, jacks, faceplates, and connectors.
 - 3) All metallic and nonmetallic raceways, including surface raceways, outlet boxes, and fittings.
 - 4) Terminal blocks and patch panels.
 - 5) Enclosures, racks, and equipment housings.
 - 6) Overvoltage protectors (if applicable).
 - 7) Splice housings (if applicable).
- c. Post Implementation Network Documentation:
 - (a) Approved NDD.
 - (b) Plan drawings indicating locations and identification of work area outlets, nodes, telecommunications closets (IDFs), and backbone (riser) cable runs.
 - (c) Telecommunications closets (TCs) and equipment room (ER and/or MDF) termination detail sheets.
 - (d) Cross-connect schedules including entrance point, main cross-connects, intermediate cross-connects, and horizontal cross-connects.
 - (e) Labeling and administration documentation.
 - (f) Warranty documents for Cables and Components.

3. USE OF THE SITE

- a. Use of the site shall be at the GNDU's direction in matters in which the GNDU deems it necessary to place restriction.
- b. Access to building wherein the work is performed shall be as directed by the GNDU.

4. CONTINUITY OF SERVICES

a. Take no action that will interfere with, or interrupt, existing building services unless previous arrangements have been made with the GNDU's representative. Arrange the work to minimize shutdown time.

b. Should services be inadvertently interrupted, immediately furnish labor, including overtime, material, and equipment necessary for prompt restoration of interrupted service.

B. PRODUCTS

MANUFACTURERS

Cables & Components with International Manufacturers of repute will be considered for this project; **Provide name of the manufacturer's for each of the products being proposed by you.**

CIVIL WORK

All civil work will be done by the contractor, should be proper way with out disturbing the environment.

Civil Materials	
Supply of material for Brick chamber 4 x 4 x 5.6 (after every 150 mtrs)	
Supply of 50 mm G.I. Pipe (ISI) with G.I. socket 50 mm (ISI)	
Supply of 40 mm 6kg pressure HDPE pipe with Nylon rope and accessories	
Supply of Route Marker	
Supply of PVC conduit & Flexible pipe 3" & 1.5 "	
Supply of RCC Split pipe	

SERVICES:		
1	Manual Boring(moiling) at 5.5 ft depth, cutting and laying & repairing in soft soil (Laying of GI Pipe, HDPE pipe with nylon rope)	
	Manual Boring(moiling) at 5.5 ft depth, cutting and laying & repairing in hard soil (Laying of GI Pipe, HDPE pipe with nylon rope)	
2	Laying of fiber Cable-armored outdoor	
3	Laying of cat6 Ethernet Cable	
3	Fiber Termination/ splicing	
4	Documentation & Labelling	
6	Installation of Brick chamber 4 x 4 x 5.6	
7	Laying of 50 mm G.I. Pipe (ISI) with G.I. socket 50 mm (ISI)	
8	Laying of 40 mm 6kg pressure HDPE pipe with Nylon rope and accessories	
9	Installation of Route Marker	
10	Laying of PVC conduit & Flexible pipe 3"	
11	Installation of RCC Split pipe	

500 users	
Specifications of Hardware	At least ten 10/100/1000 GBE Ports , Configurable Internal/DMZ/WAN ports , atleast one Console ports (RJ45/DB9), two SFP(Mini GBIC) Ports two USB ports and atleast two Hardware Bypass Segments
Performance of System	UTM Throughput not less than 550 Mbps , Firewall Throughput (UDP) 5000 Mbps,Firewall Throughput (TCP) 3000 Mbps,3DES/AES throughput 325 Mbps, Antivirus Throughput 750 Mbps ,IPS Throughput 1000 Mbps, Concurrent sessions not less than 600,000
100 users	
Specifications of Hardware	At least six 10/100/1000 GBE Ports , Configurable Internal/DMZ/WAN ports , atleast one Console ports (RJ45/DB9), two USB ports
Performance of System	UTM Throughput not less than 160 Mbps , Firewall Throughput (UDP) 1250 Mbps,Firewall Throughput (TCP) 1000 Mbps,3DES/AES throughput 80 Mbps, Antivirus Throughput 200 Mbps ,IPS Throughput 300 Mbps, Concurrent sessions not less than 300,000
Features	<p>Stateful Inspection Firewall must be Layer 8 (User - Identity) Firewall</p> <p>Gateway Anti-Virus & Anti-Spyware Virus,Worm,Trojan Detection &Removal - Spyware, Malware, Phishing protection -Automatic virus signature database update Block by file types -Add disclaimer/signature</p> <p>Gateway Anti-Spam Real-time Blacklist (RBL), MIME header check - Filter based on message header, size, sender, recipient - Subject line tagging - IPaddress Black list/White list - Redirect spam mails to dedicated email address</p> <p>Intrusion Prevention System Signatures: Default (2500+), Custom - IPS Policies: Multiple, Custom - User-based policy creation ProtocolAnomaly Detection - DDoSAttack prevention</p> <p>Web Filtering & Application Filtering URL, keyword, File type block - Categories: Default(82+), Custom - Protocols supported: HTTP, HTTPS - Block Malware, Phishing, Pharming URLs - Schedule-based access control - Custom block messages per category - Block JavaApplets, Cookies,Active X - CIPA Compliant - Data leakage control via HTTP, HTTPS upload Inbuilt Application Category Database - Application Categories e.g. Gaming, IM, P2P, Proxy: 11+ - Schedule-based access control - Block - P2Papplications e.g. Skype -Anonymous proxies</p> <p>Virtual Private Network IPSec, L2TP, PPTP - Encryption - 3DES, DES, AES, Twofish, Blowfish, Serpent - HashAlgorithms - MD5, SHA-1 -Authentication - Preshared key, Digital certificates - IPSecNATTraversal - Dead Peer Detection and PFS support</p>

	<p>SSLVPN TCP&UDPTunneling - Authentication - Active Directory, LDAP, RADIUS, Cyberoam - Multi-layered Client Authentication - Certificate, Username/Password - User &Group policy enforcement</p> <p>Bandwidth Management Application and User Identity based Bandwidth Management - Guaranteed & Burstable bandwidth policy - Application &User Identity basedTraffic Discovery - MultiWAN bandwidth reporting - Category-based Bandwidth restriction</p> <p>Administration & System Management Web-based configuration wizard - Role-basedAccess control - Firmware Upgrades viaWebUI -Web 2.0 compliant UI (HTTPS) - Command line interface (Serial, SSH,Telnet)</p> <p>User Authentication - Internal database -Active Directory Integration -Automatic Windows Single Sign On - External LDAP/RADIUS database Integration - Thin Client support - Microsoft Windows Server 2003</p> <p>Logging/Monitoring Graphical real-time and historical monitoring - Email notification of reports, viruses and attacks - Syslog support - Log Viewer - IPS, Web filter, Anti-Virus, Anti-Spam, Authentication, System and Admin Events</p> <p>User Identity and Group Based Controls Access time restriction -Time and Data Quota restriction - Schedule based Committed and Burstable Bandwidth - Schedule based P2Pand IM Controls</p>
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Company must mention the terms and conditions of the software products supplied with the UTM appliances.

Bill of Material

Kindly note, the Bill of Materials may undergo change/revision based on a splitting of the entire project into separate phases. GNDU reserves the right to change the same during the process of evaluation. However, unit prices quoted for the same would be taken into account to compute the project investments.

All prices should be in Indian Rupees

S.No	Item Description	Quantity	Unit Price	Total Price	Sales tax(if any)	Service tax(if nay)	Octroi (if any)	Total Price
1	DISTRIBUTION SWITCH	2						
2	48 port 10/100 switch with 2 dual purpose 10/100/1000 or SFP port	05						

3	24 port 10/100 switch with 2 dual purpose 10/100/1000 or SFP port	02						
4	16 port 10/100 switch with 1 to 2 dual purpose 10/100/1000 or SFP port	05						
5	8 port 10/100 switch with 1 dual purpose 10/100/1000 or SFP port	04						
6	24 port 10/100 POE switch with 1 dual purpose 10/100/1000 or SFP port	03						
7	8 port 10/100 POE switch with 1 dual purpose 10/100/1000 or SFP port	03						
8	INDOOR WIRELESS ACCESS POINT	54						
9	1000 Base T Ethernet module	06						
10	1000 Base SX (multi mode) module	16						
11	500 Users UTM appliance	01						
12	100 Users UTM appliance	02						

Note: Please mention maximum years of warranty and the AMC charges after the warranty.

S.N.	Material Description	UOM	Total Qty	Unit Price INR	Total price INR
1	6 Core outdoor MM Fiber	Mtrs	3000		
2	SC-MM Pig tail- Multi mode Fiber	Nos.	24		
3	SC-MM Coupler	Nos.	24		
4	SC-LC SM Patch Cord 3Mtrs	Nos.	21		
5	12 Port Fiber Termination Units	Nos.	02		
6	Cat 6 Ethernet Cable roll g (305 mtrs Roll)	Nos	10		
7	24 port Cat 6 Jack Panel fully loaded	Nos	15		
8.	16 port Cat 6 Jack Panel fully loaded	Nos.	03		
9	Cat 6 Ethernet Patch Cord-2mtrs	Nos	500		
10	Cat 6 information outlets with face plate	Nos	500		
11	9 U closed rack with power strip 5/15A with fan	Nos	10		
12	15 U Closed rack with power strip 5/ 15A with fan	Nos	10		
13	Route Marker	Nos.	15		
Sub Total					

IMPLEMENTATION SERVICES

Services	UOM	Total Qty	Unit Rate in INR
Implementataion of structure cabling work and associated civil work (Supply of Civil material as mention in product specification, ans services)			

Note:

The above prices have to be inclusive of all taxes & duties as applicable FOR GNDU.

QUALIFICATION REQUIREMENTS

- The Bidder or the Consortium Partner must be an Authorized System Integrator having a direct purchase and support agreement with the OEM.
- The bidder /Consortium Partner should be an AUTHORISED DEALER OF OEM for all active equipments.
- The bidder should have engineers certified and trained from OEM partners for the networking on its roll
- The bidder/Consortium Partner, as authorized agent, has should have supplied, installed and commissioned as least 3 similar project of 250 nodes in an educational Institute of national repute in past 5 years. Kindly attach proof.
- All the type of **active components** should be from the same OEM.
- The bidder should have presence of local support at regional level.
- **The Principal / OEM of the bidder should have a 24 x 7 technical assistance center in India and the bidder must have service centers of their own within 200 – 300 Km’s radius and qualified engineers to handle the project.**
- **The Principal / OEM of the bidder should have at least 5 local offices in India and should be present in the country for at least 5 years.**
- Should be able to provide certification of cabling, patch panel and information outlet for minimum of 20 years.

Terms and Conditions

1. Rates of the firm/manufacturer/dealer quoting lowest rates will be considered. Academic rates may be quoted.
2. Validity of rates should be for three months. In case prices slash down, benefit will be passed on to GND University.

3. Offers must be submitted in sealed envelopes in the name of Dean, Academic Affairs, Guru Nanak Dev University, Amritsar, titled "Tender for the Campus Wide Networking of Regional Campuses" through registered post only, within given period.
4. Earnest Money 2% of the quoted amount through a demand draft favouring REGISTRAR, Guru Nanak Dev University, Amritsar must be attached with the sealed tender.
5. Delivery period of the equipments and the completion of project must also be intimated in the tender.
6. Items quoted should be strictly according to specification given in tender document.
7. **The payment procedure shall be released only after the successful implementation of the solution. The bidder is responsible for the configuration of VLAN's on switches, configuration of UTM appliances and end to end connectivity.**
8. The rates of the equipment /items must be quoted strictly as per details given under the column bill material and FOR GNDU, Amritsar along with payment terms & conditions.
9. Incomplete bids, bids without earnest money, without brand name or received after due date shall be rejected forthwith.
10. Bidder should clearly mention the period of completion of project. A delay/penalty clause will be imposed:

$$\text{Penalty} = \frac{a}{c \times d} \times b$$

- a: **No. Of Extra days taken**
- b: **Total Cost of project**
- c: **Total Number of Switches**
- d: **Total Duration of Project (in Days)**

11. Company will provide one of his Cisco certified resident engineer at one of the central place.