Sri Krishnadevaraya University
Ananthapuramu – 515003 (A.P.)

INVITATION TO TENDER

AND

INSTRUCTIONS TO TENDERERS

FOR THE SUPPLY AND INSTALLATION
of
EQUIPMENT FOR ESTABLISHMENT
of

1. Central Computer Facility

2. Upscaling of Campus Network

3. Wi-Fi Facility

4. Digital Class Rooms

5. Multimedia Studio Centre

6. Sports Equipment for Indoor Stadium

SRI KRISHNADEVARAYA UNIVERSITY
ANANTHAPURAMU – 515 003
Rc No. SKU/RUSA/Equipment/2018,   dated:01-10-2018

TENDER NOTICE

Sealed tenders are invited on or before 08-10-2018 by 4:00.p.m. from the reputed dealers/ suppliers for Supply and installation of equipment for Central Computer Facility, Upscaling of Campus Network, Wi-Fi Facility, Digital Class Rooms, Multimedia Studio Centre and Sports Equipment for Indoor Stadium at Sri Krishnadevaraya University Campus. For details visit our website www.skuniversity.ac.in.

Ananthapuramu
Date: 01.10.2018

Sd/- REGISTRAR
S.K.University, Ananthapuramu

SRI KRISHNADEVARAYA UNIVERSITY
ANANTHAPURAMU

INVITATION TO TENDER AND
INSTRUCTIONS TO TENDERERS

Sri Krishnadevaraya University, Ananthapuramu invites tenders for the supply of Desktop Computers, Printers, Networking and Wi-Fi equipment, and equipment for Digital Class Rooms, Multimedia Studio Centre and Indore Stadium as per specifications given in the schedule attached to the Tender Form annexed hereto. All offers should be made in English and should be written in both figures and words.

The tender schedules can be obtained from the Registrar, Sri Krishnadevaraya University. Anantapuramuon payment of Rs.2,500/- in the form of crossed Demand Draft on any Nationalized Bank drawn in favour of the "**Registrar, Sri Krishnadevaraya University, Ananthapuramu**" payable at Ananthapuramu. Alternatively the tender schedules can be downloaded from the website **www.skuniversity.ac.in**. Such vendors who use downloaded tender schedules for submitting bids must enclose a demand draft for Rs.2,500/-towards the tender fee along with the bid in addition to EMD, otherwise the bid will be rejected.

Note: The DD for Rs.2,500/-, towards the tender document fee, drawn in favour of the Registrar, Sri Krishnadevaraya University, Ananthapuramu on any Nationalized Bank should have been obtained not before 01-10-2018   .

Tender fee once paid is neither refundable nor adjustable for other tenders.

Registrar, Sri Krishnadevaraya University, Ananthapuramu reserves the right to select the item or to reject it. The Registrar, Sri Krishnadevaraya University, Ananthapuramualso reserves the right to revise or alter the quantity required and the specifications of the equipment mentioned in schedules before acceptance of any tender.

Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored, and rejected.

EMD:
A Demand Draft, for **Rs.2,00,000/-** (Rupees Two Lakh Only)drawn in favour of the "Registrar, Sri Krishnadevaraya University, Ananthapuramu", towards EMD must accompany the tender. Those tenders without EMD will be rejected. The EMD will be refunded to all the unsuccessful tenderers only after the purchase orders are placed on the successful tenderer. The successful tenderer has to deposit an additional amount at **3%** on the contract value as Security Money Deposit.

The final acceptance of the material will be made only after delivering at our end in good condition and subject to satisfying all the specifications given by the University.

BID PRICE:

1. The contract shall be for the full quantity as described in the tender. Corrections, if any, shall be made by crossing out, initialling, dating and re-writing.

2. All duties, taxes and other levies payable by the vendor shall be included in the total price.

3. The rates quoted by the bidder shall be fixed for the duration of the contract and shall be included in the total price.

4. The prices should be quoted in Indian Rupees only.

5. The prices should be quoted with FOR destination.

6. Packing, forwarding, insurance etc to vendors account.

7. After satisfactory installation, testing and demonstration, training has to be provided to faculty and staff to the satisfaction of the purchaser at vendor's cost.

8. The operation and maintenance manuals and lab manuals are to be supplied at vender's cost.

9. All essential accessories cost must be included in the price quoted.

10. The cost of essential spares are to be quoted separately. This will be taken to into consideration while bids are evaluated.

11. Price bids are to be essentially signed by the vendor or person authorized by him.

12. Each bidder shall submit only one quotation. Alternatives offer option, if any, must be quoted in separate tender schedule.

VALIDITY OF QUOTATION

Quotation/Tender shall remain valid for a period of three months after the deadline date specified for submission. The vendor shall extend the validity if required.

BIDDER QUALIFICATIONS
1. The bidder must be ISO 9001-2008 certified company
2. Bidder must be a registered company with Sales Tax and Excise Departments and a true copy of the registration documents (GST, PAN, TIN) should be submitted along with the bid.
3. The bidder should have a financial turnover of Rs. 10 Crores per year for the last three years.
4. The bidders should submit the list of customers (Govt. Organizations/Universities) along with year of supply and details of equipment supplied.
5. The bidders should submit Satisfactory Performance Certificates from the customers of this equipment. The product approval certificate, if any, from reputed organizations may also be submitted.
6. Bidder debarred/ blacklisted by any Central or State Govt. / Quasi –Govt. Departments or organizations as on bid calling date for non-satisfactory past

performance, corrupt, fraudulent or any other unethical business practices shall not be eligible.

7. The Registrar, Sri Krishnadevaraya University, Anantapur reserves the right to assess the capacity / capability of the suppliers in the overall interest of the Institute without assigning any reason.

EVALUATION OF QUOTATIONS:

The purchaser will evaluate and compare the quotations determined to be substantially responsive i.e; whether they are

a) properly signed;

b) conform to the terms and conditions, and specifications mentioned in this tender.

c) the quotations unless otherwise specified would be evaluated separately for each item, and

d) If the bidder is not the Original Equipment Manufacturer (OEM) they must Provide an authorization certificate from the Original Equipment Manufacturer, **Specific to this tender** stating that the bidder is an approved agent of OEM and service warranty will be guaranteed by OEM in case the agent's license is aborted or any other reason whatsoever during the warranty period **for all the active components.**

AWARD OF CONTRACT:

The purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

1. Notwithstanding the above, the purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

2. The institution reserves the right to place the orders for individual items with different tenders.

3. **Right to Acceptance:**
The Registrar, Sri Krishnadevaraya University, Anantapur does not bind himself to accept the lowest on any tender and reserves to himself the right of accepting the whole or any part of the tender or portion of the quantity offered the tenderer shall supply the same at the rate quoted.

4. The bidder, whose bid is accepted, will be notified for the award of contract by the purchaser prior to expiry of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

DELIVERY:

All the goods ordered shall be delivered with proper packing within 30 days from the date of issue of order. All the goods shall be delivered at Sri Krishnadevaraya University, Anantapuramu.

TERMS OF PAYMENT:

a)   Payment shall be made by The Registrar, Sri Krishnadevaraya University, Anantapuramu, after delivery at the specified location, and after installation, commissioning and satisfactory demonstration of the goods with all specifications and standards to the entire satisfaction of the college.

b)   The bidder may give the details of bank and Account into which the payments are to be made.

c)   Normal commercial warranty/guarantee shall be applicable to the supplied goods.

DELIVERY OF TENDER:

Bids for schedule of the tender is to be placed in separate envelope, clearly mentioning Schedule No. on it. The Envelope must be super-scribed with the reference No. (SKU/RUSA/Tenders/Equipment /2018,dated:_____)

The sealed tender should be addressed to:

The Registrar,
Sri Krishnadevaraya University,
Ananthapuramu – 515 003.
Andhra Pradesh

Bids in sealed covers should reach the above address latest by 4:00 PM hours on 08-10-2018. Tenders submitted after the specified time shall not be considered and no intimation will be sent in this regard.

The University the Right to reject any tender which fails to comply with the above instructions. All tenders should be sent by Post or through messenger, to drop the tender in the sealed tender box provided in the office. It is the responsibility of the tenderer to see that his tender offer is delivered by the specified time at the above address. All further communication should be addressed to the officer named above and by title only.

OTHER TERMS:

Tenderer should make their representative available on 08-10-2018 at 4:00 PM at the time of opening tenders in the chambers of Registrar or any other designated place within the University.

The tenderer should produce GST-Registration certificate.

Tenderer should be responsible and bear any price escalation within the validity period and also after the indent has been placed till the supply.

Sd/-
REGISTRAR

BID PARTICULARS

1.   Name of the Supplier   :

2.   Address of the Supplier   :

3.   Address of the Show Room/Workshop   :

4.   Display of goods   :   Yes / No

5.   EMD enclosed   :   Yes / No

     DD No._____ Bank:_____ Amount_____

6.   Name and address of the officer to whom all reference shall be made regarding this tender enquiry

     Name   :

     Address   :

     Telephone No.:

     Fax No.   :

     Mobile No.   :

     e-mail   :

     website   :

TECHNICAL COMPLIANCE REPORT

S.No.	Schedule/Item No...(As given in the Annexure)	Description Goods	Compliance (Yes/No)

Signature of Supplier
with seal

FORMAT OF QUOTATION

S.No.	Schedule/Item No...(As given in the Annexure)	Description Goods / Specifications	Unit	Quoted Unit rate in Rs.	Taxes	Qty.	Total Amount in Figures

Gross Total Cost: Rs...............................

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs....................... (Amount in figures).. (Rs. Amount in words) within the period specified in the invitation for Quotations.

We also confirm that the normal commercial warrantee / guarantee of .... months shall apply to the offered goods.
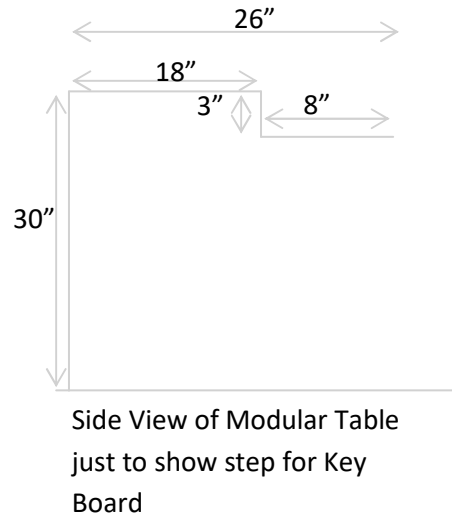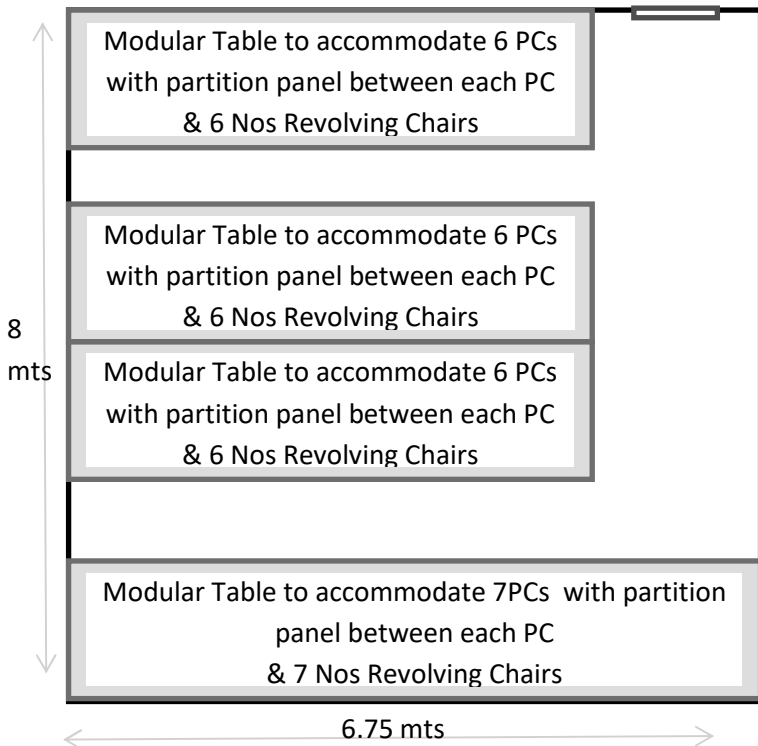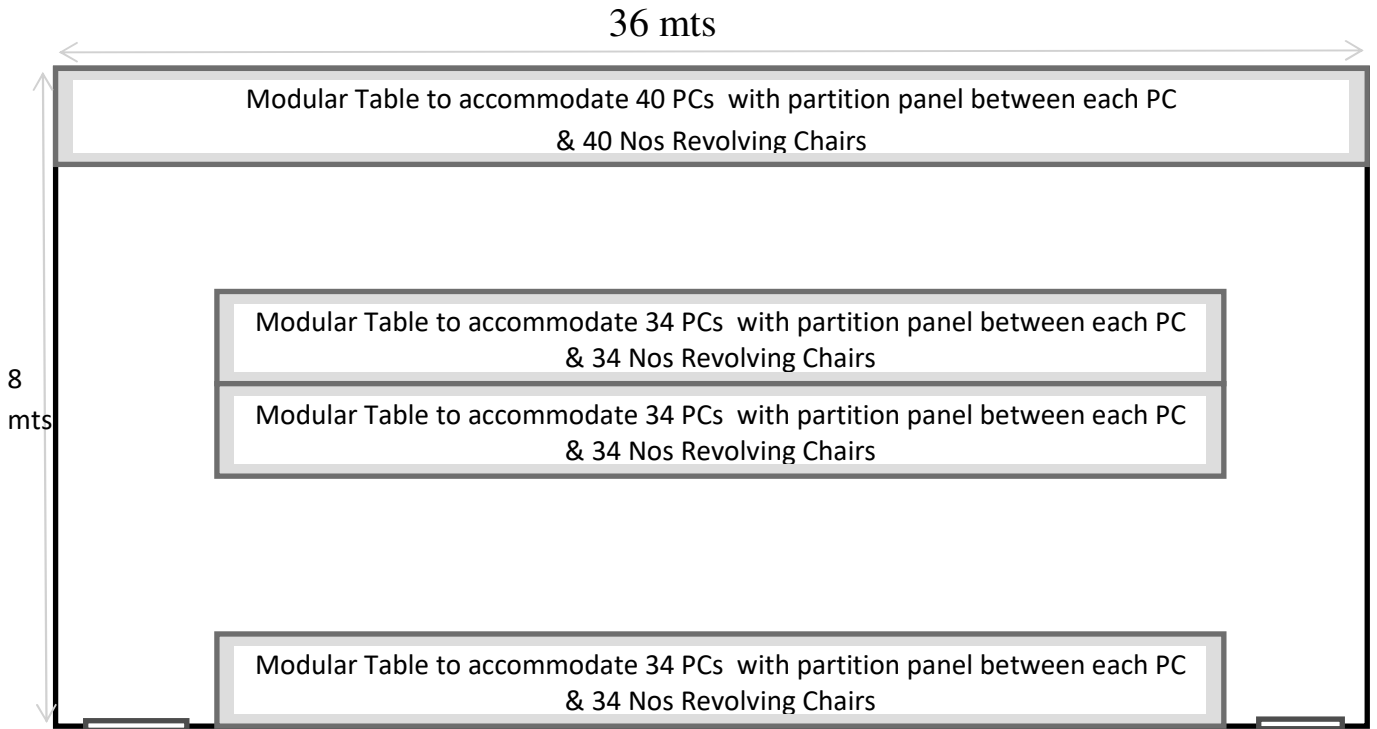
Signature of Supplier with seal

SCHEDULE I

Desktop Computers with below mentioned Specification (Make: LENOVO/HP/DELL/HCL ONLY)	Approx. Qty. Req.
(a) CPU: Intel Core i5-6500, 3.2 GHz, minimum 4 core, 6 MB L3 Cache (b) Chipset: Intel Q Series or higher compatible with CPU. (c) Motherboard: OEM Original Motherboard. (d) Bus Architecture : 3 PCI(PCI/PCI Express) with min one PCIeX16 Slot or more (e) Memory: (2x4)8 GB,2133 MHz DDR4 RAM or higher and Expandable to 64GB (f)Graphics card: AMD Radeon™ R7 450X, 4GB (g) Hard Disk Drive : 1TB, 7,200 rpm SATA hard drive (h) Monitor: 21.5" LED with HDMI port (TCO -06 certified, Same make) (i) Mouse: Optical with USB interface (j) DVD writer: 8x or better DVD writer. (k) Ports: 8 USB ports, 4 USB 3.0, 4 USB 2.0, At least 2 ports in front, 1 RJ-45, 1 Display Port 1.2, 1 HDMI 1.4, 1 UAJ, 1 Line-out, 2 PS/2 ports, 1 VGA (l) 300W APFC Power supply with minimum 85% efficency (m) Networking: 10/100/1000 on board integrated Network port Operating System: Windows 10 pro, 64bit and certificate of Authenticity	200Nos

Note:

1. The above specifications are minimum requirements however, higher technical specifications may be considered subject to competitive price offered.
2. The Product should be **listed on OEM's website along with part no.**
3. The factory of manufacturing the product should have ISO14001Certificate.
4. There may be a slight variation in the quantity required.

Rooms for Modular Computer Table Layout

36 mts

Modular Table to accommodate 40 PCs with partition panel between each PC
& 40 Nos Revolving Chairs

Modular Table to accommodate 34 PCs with partition panel between each PC
& 34 Nos Revolving Chairs

Modular Table to accommodate 34 PCs with partition panel between each PC
& 34 Nos Revolving Chairs

Modular Table to accommodate 34 PCs with partition panel between each PC
& 34 Nos Revolving Chairs

8 mts

Modular Table to accommodate 6 PCs
with partition panel between each PC
& 6 Nos Revolving Chairs

Modular Table to accommodate 6 PCs
with partition panel between each PC
& 6 Nos Revolving Chairs

Modular Table to accommodate 6 PCs
with partition panel between each PC
& 6 Nos Revolving Chairs

Modular Table to accommodate 7PCs with partition
panel between each PC
& 7 Nos Revolving Chairs

8 mts

6.75 mts

26"

18"

3"

8"

30"

Side View of Modular Table
just to show step for Key
Board

I   Modular Computer Table Specifications:

1.   Size: 35" W x 26" D x 30" H.

2. Separate Module for placing CPU should be given below the table top and Partition panel between each PC on top of the table.

3. Two 6 amps 3pin Electrical Sockets with two Switches for each socket should be given below the tabletop.

4. One SMB (IO) box with face plate and CAT 6 keystone for Internet should be given below the tabletop.

5. The base board material should be of plain particle board, board finish should be laminated and pre-laminated, edge type should be PVC edge banding.

6. All metal components should be powder coated with 40 – 60 microns.

7. Separate raceways to accommodate data and power cables.

8. Provision for wire management should be given below the tabletop

9. Furnish the Design of alignment and arrangement of furniture in the technical bid along with Brand name and model number of furniture and sample should be provided along with the quotation.

Revolving Chair – Specifications

1. Size: 65cm W x 65cm D x 68-89 cm H and Seat Height 44-56 cm
2. Should have Backrest height Adjustment
3. Should have Pivoted backrest
4. Should have five legs with stainless steel frame to support the chair

Complete Networking inside Central Computer Facility

It includes laying of CAT 6UTP cable from network switch to all 167 (142 + 25) nos. of desktop computers with proper box casingand proper punching at SMB (IO) boxand configuration of wired network.

Make and Model of the cables and SMB BOX with CAT 6 keystone and face plate should be provided along with the quotation.

Complete Electrical Wiring inside Central Computer Facility

It includes laying of electrical wires of appropriate rating from the UPS line with proper casing to connect all the 167 Nos.(142 + 25) of 3 pin socket and 334 nos. of switches to operate the 167 Nos. desktop computers.

Make, Model and rating of the cables and electrical equipment like MCB, DB etc. should be provided along with the quotation.

SCHEDULE III

Multifunctional heavy duty digital- Copier/Printer/Scanner

S.No.	Description	Approx. Qty. Req.
1.	• Printing/Copying Speed : 50 PPM or above • Memory/ HDD capacity : 6GB / 320GB or above • ADF Support • Scanning Speed : 90 Original Per Minute • Resolutions : 600dpi or above • Original Size : A5-A3 • Zoom Range : 25-400% (in 1 step) • Paper Weight : Paper Tray/Duplex Tray : 60-220 g/m² • Bypass Tray : 52-200 g/m² • Power Consumption: Operation: Max. 1.0KW • Paper Tray Capacity : 2 x 500 Sheets – 1 Bypass Tray x 100 Sheets • Connectivity: USB 2.0 or higher, Ethernet and WiFi • Make: HP/Canon/Sharp Only	2Nos

SCHEDULE IV

Online UPS: **Approx. Qty. Req.: 8 Nos**

SPECIFICATIONS	FEATURES
POWER RATING	10KVA
TYPE	True Online Double Conversion IGBT Based Inverter and IGBT based Rectifier
BACK UP	1 Hour
	Battery Type: Sealed Maintenance Free(SMF)
	12V/65AH/24Nos.
	Min. VAH:12870VAH
	Make: Exide/Amaraja Quanta/Panasonic
	Batteries to be supplied along with MS Rack
	Batteries to be supplied along with MS Rack
	UPS connection with Isolator.
INPUT PARAMETERS	Voltage Nominal-400 AC
	Voltage Range-190V to 478 AC, based on load percentage
	Frequency Range-50Hz or 60Hz +/- 5%
	Phase- Three Phase, 4Wire
	UPS should have Inbuilt Isolation Transformer at the input
OUTPUT PARAMETERS	Voltage-230V AC, Single Phase
	Voltage Regulation: +/- 1% Typical
	Frequency-50Hz
	Frequency regulation: +/- 0.05Hz in free running mode and +/- 3Hz in sync mode.
	Wave Form- True Sine wave
	Harmonic Distortion- < 2% with Linear load < 5% on Non Linear Load.
	Power Factor: 0.9 (10KVA = 9KW)
	Crest factor: 3:1.
D.C. PARAMETERS	Voltage-288V DC
	DC Ripple: < 1%.
	Battery Isolation from DC Bus.
INVERTER	Sine wave PWM Technology with IGBT as switching devices. Overload rating: 110% for 5 mints./130% for 60 sec/ 150% for 10 Seconds

CHARGER	Built in solid state three stage (Constant Current, Constant Voltage and Float cum boost) charger with temperature compensation features
BY-PASS	Bi-directional Static Switch.
	Voltage: Single Phase, 230V AC
	Overload rating: 100% for 60 milliseconds.
	Transfer Time: Less than 5 milliseconds in Sync Mode
OTHERS	Transient response: For 100% load variation i.e.
	from full load to no load to full load: Dip < 3%
	Peak < 3%
	Recovery Time: 2-3 cycles.
ISOLATION	UPS should have Inbuilt Isolation Transformer at the input
GENERAL PARAMETERS	Operating Temperature: 0-45 degcel (50 degcel Peak).
	Relative humidity: 0 to 95% (Non Condensing)
	Noise Level: Less than 60db at 1 mtr.
MECHANICAL	Enclosure Protection: IP-20
PARAMETERS	Installation on Castor Wheels.
	Simple Operating Controls.
INDICATIONS (LED)	a) Mains On
	b) Inverter On
	c) Battery On Charge
	d) Mains Over/Under Voltage
	e) Phase Fail
	f) Low Battery Imminent
	g) Battery Over/Under Voltage
	h) Inverter Over/Under Voltage
	i) Inverter Overload
	j) Overheat
	k)Load On Inverter & Bypass ON.
PROTECTIONS	a) Input Over/Under Voltage
	b) Phase fail
	c) DC over/under Voltage
	d) Inverter Over/Under Voltage
	e) Inverter Overload
	f) Overheat
	g) SOAR protection for IGBTs
	h) Output AC Over/Under Voltage
	i) High speed fuses for Semi-conductor devices
	j) Snubber Circuits for Power Semi-Conductors.
METERING	LCD Diplay to check the following

(DIGITAL)	a) AC Input / Output Voltage per Phase
	b) Load percentage
	c) DC Voltage
	d) Battery Percentage
	e) Output Frequency
AUDIBLE ALARM	Built in Buzzer operates on fault Conditions.
Certification	ISO 9001-2008,14001, OHSAS 18001, RoHS and CE. Should enclose copies of all these certificates
Test Report	Should enclose ETDC Test Report for the quoted model,, with the tender specifications.
Service support	UPS Manufacturer should have local service centres in all the districts of this state.
	Details setup to be enclosed.

SCHEDULE V

Up-scaling of Network: (Supply of network active components)

Specifications	Approx. Qty. Req.
24x10/100/1000 Base- T Port SNMP Manageable Switch with 2 nos. of SFP+ ports and 2 nos. of 1G/10G base T RJ45 ports from Day 1 with stacking capability upto 4 units	16
24x10/100/1000 Base- T Port SNMP Manageable Switch with 2 nos. of SFP+ ports and 2 nos. of 1G/10G base T RJ45 ports from Day 1 with stacking capability upto 4 units	12
24x10/100/1000 Base-T Port PoE Switch with at least 240 W or more POE power Capability	15
10/100 Mbps Fx to Tx Media Converter	20
10/100/1000 Mbps Fx to Tx Media Converter	10

(Supply of network passive components)

	Approx. Qty. Req.
CAT-6 UTP copper cable bundle, 305 mtr.	20
24 port, CAT-6 UTP modular patch panel, Loaded.	30
Cat-6 Information Outlet with shuttered face plate and SMB.	250
2ft CAT-6 UTP patch cords.	300
7ft CAT-6 UTP patch cords.	300
12 core 9/125um SMF outdoor Armoured Jelly filled cable.	3000mts
6 core 50/125um MMF outdoor Armoured Jelly filled cable.	3000mts
LIU, 12 port Rack mount loaded with 12 Core Adapter plate with Duplex SM couplers.	6
SC-SC SMF patch cords (2 Mtrs).	100
SC type SMF Pig tails.	200
OFC Jointing Kit with all accessories.	10
19", 6U wall mount rack with cable manager, power manager and accessories, Make: Valrack/ Netrack/ APW only	10
19", 4U wall mount rack with cable manager, power manager and accessories, Make: Valrack/ Netrack/ APW only	10
19" 6U Out Door Rack with accessories	5

(Labour)

	Approx. Qty. Req.
Mounting and configuration of Wireless Access Points	70
Laying of CAT-6 UTP Copper Cable	3000mts
Fixing and Termination of 24 Port Patch Panel	16
Fixing & Termination of Information Outlet	250
Over Head Laying of OFC cable	5000mts
Fixing of LIU	6
OFC Pig tail splicing	200
OFC cores splicing using jointing kit	10
Mounting of wall mount/Out Door/ floor mount Racks	25
Laying of PVC Casing/Pipe/flexible pipe with Accessories like screws, joints, bends, saddles and other accessories for completing the job	1000mts
UTP/OFC Plant cable Testing, documentation (AutoCAD drawing with cable layout)	
Installation & Commissioning Charges	

SCHEDULE VI

Supply of Wi-Fi AP and Wi-Fi AP Controller

	Approx. Qty. Req.

Wi-Fi Access Point
1. Dual Band and Dual Radio, controller based 802.11 a/g/n/ac AP
2. Standards support – a. IEEE 802.11n b. 802.11g c. 802.11b d. 802.1X (secure authentication) e. 802.1Q (VLAN) f. 802.11i (WPA2 security) g. 802.11e (Wireless QoS) h. IPv4 i. IPv6
3. Ports PoE 10/100/1000 Ethernet
4. Cabling type Category 6 or better
5. Antennas Integrated internal antennas optimized for wall, ceiling, or desktop placement.
6. Power 802.3af PoE and support for 12V DC Adapter (No adapter is required to be supplied)
7. Lock slot Slot for Kensington lock
8. Network Capabilities VLAN support, Number of VLANs (1 management VLAN plus a minimum of 8 VLANs for Service Set ID (SSID))
9. Multiple SSIDs Up to Eight BSSIDs per Radio; total of 16 SSIDs 802.1X supplicant, SSID to VLAN mapping, Auto channel Selection, Spanning tree, Load balancing
10. IPv6 host support
11.Authentication RADIUS, Syslog, Network Time Protocol (NTP), etc. and Logging
12.Data Rates Up to 1.3Gbps with automatic rate adaptation.
13.Modulation Type DSSS, OFDM
14.Dynamic Channel DFS and DFS2
15. Security WPA/WPA2 (802.11i) with TKIP or AES-CCMP encryption and PSK or 802.1x authentication
16.WIPS Integrated WIPS background scanning and Rogue AP detection / prevention. Wi-Fi presence monitoring and analytics. Ability in APs to do packet capture on all channels
17.802.11n Support 2 x2 multiple-input multiple-output (MIMO) with two spatial streams, 20 and 40 MHz channels, PHY data rates up to 300 Mbps, 802.11 dynamic frequency selection
18.Data Rates 802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps Supported 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps 802.11n data rates (2.4 GHz and 5 GHz): upto 300 Mbps.
19. Channels 20 MHz and/or 40 MHz
20. Frequency Bands
`2.400 to 2.4835GHz`
`5.150 to 5.250GHz`
`5.250 to 5.350GHz`
`5.470 to 5.725GHz`
`5.725 to 5.850GHz`
21. RF Output Power Maximum 21 dBm for both 2.4 GHz and 5GHz; Country specific Power settings should be configurable
22. Statistics LAN, wireless, and associated stations
	80

23. Auto AP Software Through Controller or FTP or TFTP Updates 24. Rate Limiting Supported per SSID 25.Mounting Kit Supply of Mounting Kit is necessary for all Access Points 26.Secured Lock Kensington lock has to be supplied with each AP 27.Warranty Limited Life Time warranty	
Wi-Fi Access Point Controllerwith 80 Licenses Access Point Controller can be either software based or hardware appliance based. It should support the following features: 1. The WLAN Controller must have support for up to a minimum of 120 Access Points. 2. If it is Appliance based controller must have Dual Gigabit Ethernet interface and Dual Power Supply 3. Configuration via Web User Interface or other Management Software 4. Must support Auto AP Software update 5. Support for Guest Access 6. VLAN Support 802.11q (per BSSID) 7. Embedded DHCP Server 8. AP Discovery & Control on Layer 2 or Layer 3 9. Support for up to 16 SSID 10. Wireless Security WEP, WPA-TKIP, WPA2-AES, 802.11i 11. Authentication support through 802.1x, Local Database, External AAA Servers - Active Directory, RADIUS server 12. Support for 802.11e 13. Support for per client, per traffic type software queues 14. Auto Classification based on Heuristics/Rules 15. Support for Rate Limiting 16. Should support SNMP traps 17Should support comprehensive reporting like Rogue AP/Client list, currently Associated Clients devices with IP address, mac address etc. 18. Should allow export of configurations and Reports in text, pdf or equivalent formats 19. WLAN Solution must support an ability to dynamically adjust channel and power settings based on the RF environment.QuotedAcess point must support necessary spectrum analysis functionality to achieve this. 20. WLAN Solution should have failover mechanism where if central system goes down user session, application should not be disconnected it should be seamless failover. 21. WLAN Solution must support an ability to dynamically adjust channel and power settings based on the RF environment.QuotedAcess point must support necessary spectrum analysis functionality to achieve this.	1
Firewall: Fortigate800C with all necessaries	

SCHEDULE VII

Firewall / Security Appliance:

GENERAL Specifications
Authentication Method: Active Directory, LDAP, RADIUS, SecurID, Secure Shell (SSH), TACACS+
Should support hot swapable dual power supply
OEM should be in Leaders quadrant in latest Gartner Magic Quadrant for Enterprise Firewall 2017
Should be ICSA Lab certified for the Firewall
Throughputs
Minimum Firewall Throughput should be 30 Gbps

Enterprise Mix/Real World NGFW throughput should be minimum 3.5 Gbps

Enterprise Mix/ Real World Threat Protection throughput should be minimum 2.4 Gbps
IPSec VPN Throughput should be minimum 18 Gbps

NETWORKING

Remote Management Protocol : CLI, HTTP, HTTPS, SNMP, SSH, Telnet

Network / Transport Protocol : DHCP, DNS, TCP/IP, FTP, IMAP, IPSec, L2TP, POP3, PPPoE, PPTP, SMTP

Features : DHCP client, DHCP server, Link Aggregation Control Protocol (LACP), NAT support, Network Access Control (NAC), PAT support, RADIUS support, SSH support, Syslog support, URL filtering, VLAN support, VPN passthrough, DMZ port, VPN support, anti-malware protection, anti-spam protection, antivirus analysis, auto bypass, content filtering, e-mail notification, firewall protection, load balancing, network monitoring, Data Loss Prevention (DLP), traffic shaping, two bypass interface pairs, DiffServ support, High Availability, IPv4 support, IPv6 support, Intrusion Prevention System (IPS), LDAP support

Routing Protocol : BGP, OSPF, RIP, VRRP
Should have minimum 16 nos of 1G RJ45 ports
Should support minimum 8 nos of 1G SFP slots
Should support minimum 2 nos of 10G SFP+ slots
Should have two bypass interface pairs
Should support IEEE 802.1Q
Capacity : Concurrent sessions: 5,000,000
New sessions per second: 250,000
Gateway to gateway IPSec VPN Tunnels (system): 10000
Concurrent SSL VPN users: 1000

Should support Virtual domains/systems and should have license for minimum 10 from day one

Should support Wireless controller feature with minimum of 500 Access Points

Should support 2 factor authentication
User licenses: unlimited
VoIP Protocols : H.323, SCCP, SIP

MANUFACTURER WARRANTY

Service & Support : Limited warranty - replacement - 3 years - response time: 3 days

Technical support - phone consulting - 3 years
Product info support - phone consulting - 3 years
Technical support - web support - 3 years
Product info support - web knowledge base access - 3 years
New releases update - 3 years
Virus definitions update - 3 years
URL database update - 3 years
E-mail database update - 3 years
Intrusion definitions update - 3 years

SERVICE & SUPPORT DETAILS

Service Included : phone consulting, replacement, web knowledge base access, web support

Full Contract Period : 3 years
Response Time : 3 days

Tentative Make:
Fortinet; Model: FG-800D-BDL-900-36 FortiGate-800D Hardware plus 8x5 FortiCare and FortiGuard Bundle Hardware plus 3 year 8x5 Forticare and FortiGuard UTM Bundle

SCHEDULE VIII

Digital Class Room Equipment:

	Approx. Qty. Req.
Clever Touch Interactive White Board: 84" Anti-glare High strength, low reflection hard coated eco-friendly composite,material, wear resistant surface optimized for projection with **Multi-touch gestures** (Perform a series of two-finger touches), **Dual Touch & Write** (Enables two users to touch & write at same time) & Robust IR, Finger & Pen touch,High Quality with Precise Calibration, Easy to Mount. Warranty: 2 Years on Board only against manufacturing defects, Warranty does not include the software & training.	3Nos
Short Throw DLP PROJECTOR: 3200 ANSI Lumens XGA(1024x768) Resolution Projector, compatible up to SXGA, Off & GO, Contrast Ratio: 22000:1, Aspect Ratio 4:3, Lamp Life upto 10000 Hours in Eco Mode, Warranty: 2 Years on Projectotr,12 Months/1000Hrs whichever is earlier **Connectivity:** Digital Input HDMI 1.4,RGB Input 15-pin mini D-Sub (x2),RGB Output 15-pin mini D-Sub Composite Input RCA jack,S-Video 4-pin mini-DIN Audio Input 3.5mm mini jack,Audio Output 3.5mm mini jack,USB Mini type B Short Throw Mount with 10mt HDMI 0r VGA & Power Cable 30+30Watts 2 Way Powered Speaker with wireless collar mike	3Nos
AUDIO PODIUM All In One Design, Built-in 60 W Mixer Amplifier and 30W External Speakers, Auxiliary Input, Recording and Speaker Output,With Gooseneck Microphone and LED Light, Top Platform ideal for Speech Delivery, Lectures and Meetings, Aux & External Mic Input, Bass Treble & Volume Control, 2 Wireless Mics with**12 Months Warranty against Manufacturing Defect**	3Nos
4K UHD LED Interactive PANEL **65" 4K Ultra HD (3840X2160),** IR Touch, 10 Touch Points 178 Degree Viewing Angle, Brightness: 370 nits, Contrast Ratio 4000:1, 2X15 W Speakers, Less Power Consumption(<220Watts), 1xVGA, 4xHDMI, 4 USBwith 3 year warranty Floor Mount Stand for 65" Panel Wall Mount Bracket for 65" Panel	3Nos
4K UHD LED Display **75" 4K Ultra HD (3840X2160),** 178 Degree Viewing Angle, Brightness: 370 nits, Contrast Ratio 4000:1, 2X15 W Speakers, Less Power Consumption(<350W), 1xVGA, 4xHDMI, 4 USBwith 3 year warranty (Detailed Specifications are attached Floor Mount Stand for 75" Display Wall Mount Bracket for 75" Display	1No

Schedule IX

Multimedia Studio Centre:

S.No.	Particulars / Descriptions of the Items	Approximate Quantity
1	Pan-Tilt-Zoom (PTZ) cameras	3
2	Tripods for PTZ cameras	3
3	Touch screen monitor with built-in software	1
4	Mirroring Desktop Computer	1
5	Studio CFL Lights	10
6	Video Switcher	1
7	Audio Mixer	1
8	PTZ Cameras Remote Control	1
9	Wired Lapel Microphone	1
10	Roof-mounted condenser microphones	2
11	Cables & Connectors	As per the measurements mentioned in Picture
12	Sound-proofing in studio	As per the measurements mentioned in Picture
13	Lighting grid	As per the measurements mentioned in Picture
14	Green Screen mounted grid	As per the measurements mentioned in Picture
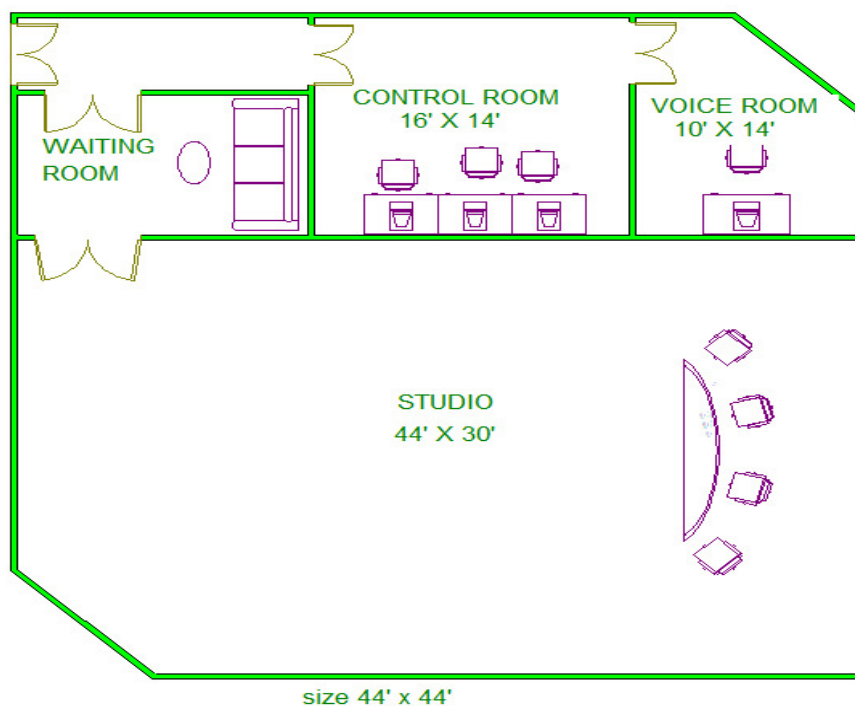
Schedule X

Sports equipment for Indoor Stadium:

S.No.	Particulars / Descriptions of the Items	Approximate Quantity
1	Basket Ball Post Movable – Premium (Spring Loaded System)- KX-BBPMP	1
2	Volley Ball Post Telescopic –Movable (KX-VBPTM)	1
3	Badminton Post Movable- 100 KG (KX-BPM100)	1
4	Balancing Beam (KX-GBB2001)	1
5	Crash Landing Mat- Premium(KX-CGMP3230)	1
6	Gymnastic Bench Coloured (KX-GMB2004)	1
7	Pommel Horse (KX-GBH2007)	1
8	Trampoline –Standard (KX-TRS)	1
9	Symmetric Bars	1
10	Asymmetric Bars	1
11	Basket Ball Score Board	1
12	Table Tennis Score Board	1
13	Table Tennis Board (STAG) International DX1000ITTF APRD.	1
14	Multi Gym 24 Station "MONALISA" Premium Quality With Chromium Rod, Plates, Handle & Pulleys.	1