

# Cadet College Larkana

Name of Work : Information & Computing Technology System

S#	Description	Brand	Qty.	Unit	Rate	Amount
1	<b>MultiMedia Language Laboratory System</b> Supply and Installation of a 100 % Pure Software based Multi-Media Language Laboratory Solution for 1 Teacher + 50 Students. The solution should meet and exceed all specifications of Digital Language Laboratory Solution. The solution should include  * All furniture required for 50 Students + 1 Teacher including Teacher/Student Platforms * Complete Networking Including all passive and Active equipment along with electrical wiring of the LLS * Having the Capability to work and expand over the WAN/LAN Base LLS System * All Computer Hardware including 19" LED Monitors, headset, keyboard, mouse Etc. for 50 Students + 1 Teacher (as per specification given beneath) * All Software complete with life time licenses for 50 Students + 1 Teacher including English Language Learning Software 1. Talk Now ! 2. Talk Business ! 3. World Talk ! 4. Talk More ! <b>Software Details</b> * The language lab should support both hardware based and software based lab environment. * The system should be able to load on multi operating systems like windows. * The software should be capable of being installed in desktops, laptops and tablets. * The software should work in wired LAN . * The software should support one teacher work station and a maximum of 50 student stations.	Sanako/Evo /Euro Talk or equivalent	01	Job		

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	<p>* The software should have a media activity which will enable a teacher to create/upload audio, video and texts (MSWORD, NOTEPAD, PDF and etc) based content and integrate customized study modules.</p> <p>* The teacher should be able to use one monitor dedicated as the control panel to manage the language lab activity.</p> <p>* The teacher should be able to send the instructor screen, audio, video and text based content to student consoles for teacher presentation.</p> <p>* The teacher and students should be able to interact (speaking/ listening) using headset with built-in microphone.</p> <p>*The teacher should also be able to silently monitor/listen to the audio of the student in real time.</p> <p>* There should be facilities for the teacher to have one to one talk with the students, to address them as a group, to facilitate student pairing, small group formation etc. to facilitate different language learning activities.</p> <p>* The student/teacher should be able to interact through the headset and microphone without interfering with other student's audio –visual track.</p> <p>* The students should be able to call the teacher through the system to clear doubts without disturbing the other students.</p> <p>*The software should be able to support an effective teaching and learning environment with interactivity and collaborative work, and should be able to provide tools to organize lessons and assess students' progress in the language lab.</p> <p>* The teacher should be able to divide the students into virtual pairs, groups and facilitate collaboration. Teacher can also create designated group leaders who can be granted additional capabilities.</p> <p>* The software should provide a track of students' progress in the language lab. It should comprise tools for assessing students learning in the lab.</p> <p>* The software should be able to maintain a database of each registered student and should have necessary tools to assess the proficiency/level of each registered student in the lab.</p>					

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	<p>*The software should be able to compile different level of learners in different groups</p> <p>* The teacher should be able to monitor the screen of a student in a single view and assist them remotely. They should be able to have access to individual student's work station and take control of it when needed.</p> <p>* The teacher should be able to start, reboot, shut down student PCs, launch and close application and open website remotely from the teacher's panel.</p> <p>*The teacher should be able to share the screen of a particular student to the entire class.</p> <p>* The teacher should be able to transfer different format of files (photos, audio, video, text, doc, pdf etc.) to the specified folder on students' side and collect files from the students' computer.</p> <p>* The students should be able to submit their completed work, classroom assignment, home assignment, quizzes, and exercises to the teacher console. The teacher should be able to provide feedback or comment on students' performance.</p> <p>* The teacher should be able to broadcast media files of different format (including online content) from their console to the students' smoothly.</p> <p>*The teacher should be able to broadcast the text etc. on the whiteboard to student in real time.</p> <p>* The teacher should be able to use digital recorder to divide the language video file into several parts for student to repeat, and record student practice.</p> <p>* The teacher should be able to create several topics and enable the students to choose the topic to join in the discussion.</p> <p>* The software should be able to record audio or video student activities for evaluation and feedback purposes.</p> <p><b>MODULE FOR LANGUAGES</b></p> <p>Language Enrichment: The content should focus on building all four language skills namely, English/Arabic/Chinese/German.</p>					

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	<p><b>LISTENING</b> Learners should be given practice in listening to the sounds of the language. They should be able to recognize the phonemic sounds, distinguish between them and understand the use of correct stress and intonation in oral communication. The exercises should measure learner's understanding of audio material and provide feedback. It should especially focus on:</p> <ul style="list-style-type: none"> <li>• Listening for general content</li> <li>• Listening to fill up information</li> <li>• Intensive listening</li> <li>• Listening for specific information</li> </ul> <p><b>SPEAKING</b> Learners should be able to express themselves fluently and coherently in social and professional contexts. They should be able to speak English in a globally-accepted, neutral accent with minimized regional influences in speech patterns. The exercises should enable the learners to identify and correct common grammatical errors. It should have resources on:</p> <ul style="list-style-type: none"> <li>• Understanding and correcting paralinguistic (voice quality, volume, pace, voice modulation, articulation, pronunciation, etc. ) attributes</li> <li>• Oral practice</li> <li>• Describing objects/situations/people</li> <li>• Individual/Group activities</li> <li>• Extempore, debate, group discussion, role play, public speaking, etc.</li> <li>• Just a Minute (JAM) Sessions</li> </ul> <p><b>WRITING</b> The learners should be able to communicate their message with clarity and ease to a distant audience. The exercises should enable the learners to practice their writing skill in a way that promotes noticing of correct grammatical and vocabulary structures and reflect on why those are used. It should focus on:</p> <ul style="list-style-type: none"> <li>• Basic skills of simple and short composition</li> <li>• Writing sentences</li> <li>• Techniques of creative and critical writing</li> <li>• Use of appropriate vocabulary</li> <li>• Paragraph, essay and précis writing</li> <li>• Coherence and cohesiveness</li> <li>• Narration / description</li> <li>• Note Making</li> <li>• Formal and informal letter writing</li> <li>• Editing a passage</li> </ul>					

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2	<b>HARDWARE COMPONENTS</b> <u>Supply and installation of Teacher's PC</u> Board Intel Server PC for Language Lab, Core i7 processor, DDR3 RAM 8GB, HDD 2TB, DVD RW. With 19" LED Monitor, keyboard and mouse	HP or Equivalent	01	Nos.		
3	<u>Supply and installation of Student PC</u> Core i7, HDD 1TB Sata, Memory 4GB DDR3, DVD/RW. With 19" LED Monitor, keyboard and mouse.	HP or Equivalent	50	Nos.		
4	Supply and installation of Interactive With Board/Projector "82 inch IR Interactive Smart Whiteboard Multi-touch <ul style="list-style-type: none"> <li>• Resolution 32767 x 32767 (Interpolation)</li> <li>• Linearity error 1.5mm</li> <li>• Response time 8ms</li> <li>• Response speed &lt; 20ms</li> <li>• Input method : finger ,teaching point or opaque object</li> <li>• Touch times : unlimited</li> <li>• Touch activation force: no minimum touch activation force is required with IR touch technology</li> <li>• Min object touch : 5mm</li> <li>• Ratio : 4:3</li> <li>• Touch technology : IR</li> <li>• Interface : USB</li> <li>• Size : 1722x1241x38 mm</li> <li>• Active area : 1606.5x1126.5mm</li> </ul>	Genius / IE Board/ or Equivalent	01	Nos.		
5	Supply and installation of Motorized screen 8x4	Genius or Equivalent	01	Nos.		
6	Supply and installation of LCD shortthrow Projector 2800 ANSI Lumens, XGA with contrast ratio 3000:1 Fan Noise 37dB with 4000 Hrs. Normal Lamp Life. Aspect ratio 4:3	ASK Proxima or Equivalent	01	Nos.		
7	Supply and installation of Line interactive KVA UPS in parallel configuration with common battery bank with 20 minutes backup.	ABB or Equivalent/ Local Made	01	Nos.		
8	Supply and installation of 52" LED Screen	Samsung Or Equivalent	01	Nos.		
9	Supply and installation of DVD Player	Samsung Or equivalent	01	Nos.		
10	Supply and Installation of 4 Ton Floor Standing Comfort Air Conditioning unit with stabilizer	Gree/Dikool or equivalent	02	Nos.		
11	Supply and Installation of 4-Input/1-Output 60 Watt Public Address system for Language lab with 4 wall mount speakers with mounting brackets, 2 Microphones, with all wiring complete in all aspects.	SPON/Intrum or Equivalent	01	Job		
12	Supply and Installation of Complete Networking and Internal Electrical Work of the Language Lab	Panduit or Equivalent	01	Job		

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13	Language Laboratory Furniture for 50 Students and 1 Teacher as per given design	Branded	01	Job		
14	<b>ESTABLISHMENT OF COMPUTER LAB</b> <b>Supply and Installation of (50)Student + (1) Teacher PC with following configuration</b> Supply & installation of Core i7, processor speed 3.4 GHz, 6 M cache, storage 500GB Sata HDD, Memory 4GB DDR3, OS dos, optical drive DVD/RW Graphics processor Intel shared with 19" LED screen, keyboard and mouse	HP or equivalent	51	Nos.		
15	Supply and installation of 4 ton Floor Standing Comfort Air conditioner with stabilizer	Gree/Dikool or Equivalent	02	Nos.		
16	Supply and installation of Interactive With Board/Projector "82 inch IR Interactive Smart Whiteboard Multi-touch • Resolution 32767 x 32767 (Interpolation) • Linearity error 1.5mm • Response time 8ms • Response speed < 20ms • Input method : finger ,teaching point or opaque object • Touch times : unlimited • Touch activation force: no minimum touch activation force is required with IR touch technology • Min object touch : 5mm • Ratio : 4:3 • Touch technology : IR • Interface : USB • Size : 1722x1241x38 mm • Active area : 1606.5x1126.5mm	Genius / IE Board or Equivalent	01	Nos.		
17	Supply and Installation of LCD Short throw Projector 2800 ANSI Lumens, XGA with contrast ratio 3000:1 Fan Noise 37dB with 4000 Hrs. Normal Lamp Life. Aspect ratio 4:3	ASK Proxima or Equivalent	01	Nos.		
18	Supply and Installation of Line interactive UPS in parallel configuration with common battery bank with 20 minutes backup.	ABB or Local Made	01			
19	<b>Networking</b> Supply and Laying of Cat6 UTP cable between Patch Panel & Student PC	Panduit or Equivalent	3500	Mtr		
20	Supply and Laying of Cat6 UTP Cable between Patch Panel and Teacher PC	Panduit or Equivalent	200	Mtr		
21	Supply of 24 port Loaded Cat6 Patch Panel	Panduit /ComScope	03	Nos.		
22	Supply and installation of dual outlet Face Plate with Back Box complete with 2xcat6 Modules	Panduit /ComScope	51	Nos.		

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23	Supply and installation of 12U Wall mount rack with PDU	Infinety	01	Nos.		
24	Supply and installation of of 48 port 10/100/1000 base-t rack mount network switch with 2xsfp	Cisco/Juniper or Equivalent	01	Nos.		
25	Supply and installation of 24 port 10/100/1000base-t rack mount network switch with 2xsfp port	Cisco /Juniper or Equivalent	01	Nos.		
26	Supply and installation of 1U cable manager	Panduit or Equivalent	04	Nos.		
27	Supply of Cat6 1mtr Patch Cords	Panduit or Equivalent	50	Nos.		
28	Supply of Cat6 3 mtr Patch Cords	Panduit or Equivalent	50	Nos.		
29	Supply and installation of Channel Patti 25x25	OEM	01	Job.		
30	Electrical Works complete in all aspects	OEM	01	Job		
31	Supply and installation of Computer Lab Furniture for 50 Students and 1 Teacher as per given design	Branded	01	Job		
32	<b>SMART LAN BASED EDUCATION SYSTEM Software</b> Supply, installation and training of Centralized Software suite supporting up to 200 student and 10 teachers concurrently. The software must support following Subject . <ul style="list-style-type: none"> <li>English</li> <li>Maths</li> <li>ICT</li> <li>Science</li> <li>Physical Education</li> <li>Design and Technology</li> <li>Geography</li> <li>Business Studies</li> </ul> Educational software designed for whole-class teaching on interactive whiteboards and projectors.	DayDeam Software or equivalent	01	Job		
33	Supply and installation of Interactive With Board Complete with Short throw Projector "82 inch IR Interactive Smart Whiteboard Multi-touch <ul style="list-style-type: none"> <li>Resolution 32767 x 32767 (Interpolation)</li> <li>Linearity error 1.5mm</li> <li>Response time 8ms</li> <li>Response speed &lt; 20ms</li> <li>Input method : finger ,teaching point or opaque object</li> <li>Touch times : unlimited</li> <li>Touch activation force: no minimum touch activation force is required with IR touch technology</li> <li>Min object touch : 5mm</li> <li>Ratio : 4:3</li> <li>Touch technology : IR</li> <li>Interface : USB</li> <li>Size : 1722x1241x38 mm</li> <li>Active area : 1606.5x1126.5mm</li> </ul>	Genius / IE Board/ASK proxima	11	Nos		

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34	Supply and installation of 19" rack mount Quad Core server with min of 8GB ram ,4TB HDD hot swappable, Hot swappable P.S for Centralized Educational Software	HP/DELL or Equivalent	01	Nos.		
35	Supply of Laptop with latest configuration Minimum Core-i7 6500U-2.5GHz (6th Generation) 8GB RAM, 1TB HDD, Dos, Wife, HD Cam.	HP or Equivalent	12	Nos.		
36	Supply of Laptop with latest configuration Minimum Core-i7 6500U-2.5GHz (6th Generation) 8GB RAM, 1TB HDD, Dos, Wife, HD Cam.	MAC PRO	03	Nos.		
37	<b>IP BASE CCTV SOLUTION</b> Supply and installation Of 6MP IP Indoor Box Camera, C/CS Lens 1.8"Progressive Scan CMOS, Day/Night ICR, Image DWDR, True D/N, 3D-DNR, Min. Illumination 0.005lux @F1.2 AGC Video Compression H.264 HP/MP/BP/M-JPEG, Max.image Resolution 3072x2048, Frame Rate 20fps @6MP	Siqura /Qihan or Equivalent	25	Nos.		
38	Supply and installation Of 6MP IP Outdoor weather proof and water proof Box Camera, C/CS Lens 1.8"Progressive Scan CMOS, Day/Night ICR, Image DWDR, True D/N, 3D-DNR, Min. Illumination 0.005lux @F1.2 AGC Video Compression H.264 HP/MP/BP/M-JPEG, Max.image Resolution 3072x2048, Frame Rate 20fps @6MP	Siqura /Qihan or Equivalent	25	Nos.		
39	Supply and Installation of IP Outdoor PTZ 30X Optical Zoom 1/2.8", 2megapixel, progressive scan, CMOS, Lens 4.5 ~ 135 mm Smart IR, up to 100 m (328ft) IR distance. Video Max. Resolution 1920 × 1080, Video Compression H.264,MJPEG, Frame Rate 1080P (1920*1080):	Siqura/Qihan or Equivalent	06	Nos.		
40	Supply, installation and training of CCTV Management Software	Siqura/Qihan	01	Nos.		
41	Supply of Channel License per Camera	Siqura/Qihan	56	Nos.		
42	Supply and Installation of CCTV Storage Server for Data Recording of upto 30days	Siqura/Qihan	01	Nos.		
43	Supply and installation of PTZ Controllers	Siqura /Qihan	01	Nos.		
44	Supply and installation of Siqura DIN RAIL MOUNT Industrial Grade XsNet C4208 SW PoE 8+2 port	Siqura /Qihan or Equivalent	12	Nos.		
45	Siqura 10/100/1000BT Media Converter XSNet 3300MC SFP	Siqura or Equivalent	56	Nos.		
46	Supply and installation of Data Point for Each Location	Panduit/Comm Scope	56	Nos.		
47	Supply and installation of Data Cable including excavation of trench (3 Ft x1.5 ft) and laying upvc pipe for cable and fixing of cable marker on the line and laying brick (9" x 4" ½) over the cable and refilling of earth/sand as per direction of the Engineer	Panduit/Comm Scope	4480	Mtr.		
48	Supply and installation PVC Pipe ½ Inch	OEM	14694	Ft.		



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49	Supply and installation of Channel Patti 25x25	OEM	2000ft			
50	Supply and installation of 24 port 10/100/1000 Base Network Switch	CISCO/JUNIPER /HP	02	Nos.		
51	Supply and installation of 8way PDU	INFINETY	06	Nos.		
52	Supply and installation Network Cabinet 9U	INFINETY	06	Nos.		
53	Supply and installation of Mylar Twisted 3 pair	INFENIY or equivalent	150	Mtr.		
54	Supply and installation Electrical Point for each location	As per approved	56	Nos.		
55	Supply and installation of Pole for Mounting of Cameras in Open Locations	OEM	25	Nos.		
56	Supply and Installation of 60" LED Screen for CCTV Control room	Samsung or Equivalent	01	Nos.		
57	Supply and installation of Pole/ Wall mount Media Box for housing power adaptors, media convertors etc.	OEM	25	Nos.		
58	<b>RFID UHF BASED LIBRARY MANAGEMENT SOLUTION using existing students RFID cards as library Cards</b> <i>Supply, installation and training of LIBRARY MANAGEMENT SOFTWARE</i>	IMPRO OR EQUIVALENT	01	Nos.		
59	<i>Supply and installation of RFID SYSTEM HF TAGS FOR BOOKS</i>	E-Tag or Equivalent	40000	Nos.		
60	<i>Supply and installation of RFID STAFF STATION</i> a) Core i7 desktop machines complete with Keyboard mouse and 21" led monitor b) Arming/disarming module ,tagging module and sorting module c) Barcode reader HF tag reader	HP /equivalent	01	Nos.		
61	<i>Supply and installation of RFID HF SHELF MANAGEMENT SYSTEM ( ALL IN ONE MOBILE TABLET+ Software )</i>		01	Nos.		
62	<i>Supply and installation of PATRON CARD PROCESS SYSTEM</i>		01	Nos.		
63	<i>Supply and installation of RFID HF DETECTION GATES SINGLE AISLE N2</i>		01	Nos.		
64	<i>Supply and installation of UPS T WITH 20 MIN BACKUP</i>	ABB / Local made	01			
65	<i>Supply and installation of ELECTRICAL POINT FOR EACH LOCATIONS</i>		46	Nos.		
66	<i>NETWORK POINT FOR EACH LOCATION</i>		22	Nos.		
67	Supply and installation of Of Computer with latest configuration Core i7 processor speed 3.4 GHz, 6 M cache, storage 500GB Sata HDD, Memory 4GB DDR3, OS dos, optical drive DVD/RW Graphics processor Intel shared more keyboard mouse, LED 19	Hp / equivalent	20	Nos.		

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68	<p><b><u>INDOOR LED SMD 4K RESOLUTION VIDEO WALL</u></b></p> <p>Supply ,Installation and commissioning, mounting on floor or wall with standard fitting &amp; fixtures etc. complete in all respect preferably size which may be adjustable as per site requirement. All the items devices, equipment's fittings, Video Processor ,Networking Aluminum Alloy Cabinet Indoor, fixtures weather or not specified in specifications which are necessarily required shall be deemed to have been mentioned in the specifications.</p> <p><b><u>MODULE SPECIFICATION</u></b></p> <p>*Pixel Encapsulation SMD 2121</p> <p>*Pixel 1R1PG1PB</p> <p>*Pixel Pitch 6mm</p> <p>*Module Resolution 64x64dots</p> <p>*Module Pixel 4096 dots *</p> <p>Module Size 192 x192 mm *</p> <p>Screen Size 576 x576x80mm</p> <p>*Cabinet Pixel 192 x192 dots</p> <p>*Pixel Density 11111dots/m2</p> <p>* Cabinet Material Die Cast Aluminum</p> <p>* Brightness 1300-1600cd/m2</p> <p>Viewing Angle H140, v140</p> <p>View Distance &gt;/ 3M</p> <p>Gray Scale 16bits</p> <p>Display Color 281 Trillion</p> <p>Refresh Frquency &gt;/1080Hz</p> <p>MTBF &gt; 10,000 hours</p> <p>Life Span &gt;100,000 hous</p>	XTREME/PLANNAR OF EQUIVALENT	01	Job		
69	<p><b><u>UPGRADATION OF DATA CENTER</u></b></p> <p>Supply and installation of 19" rack mount Intel Xeon Multicore, octa core processors, high and graphics support featured Intel chipset maximum processor upgradeable option. Ram 16 GB 2 x 2TB Hot swappable HDD and Hot swappable power supply.</p>	HP/DELL OR EQUIVALENT	01	Nos.		
70	<p>Supply and Installation of Time and Attendance Biometric Machines. IP based Outdoor Fingerprint Terminal with given Specifications.</p> <ul style="list-style-type: none"> <li>• CPU 400MHz DSP</li> <li>• Memory 8MB flash + 16MB RAM</li> <li>• Fingerprint Sensor 500 dpi optical sensor</li> <li>• Identification Speed 2,000 matches in 1 second</li> <li>• Fingerprint Capacity 5,000 fingerprints (10,000 templates)</li> <li>• Log Capacity 50,000 events</li> <li>• RF Card Mifare (13.56 MHz)</li> <li>• Authentication Finger / PIN / Card</li> <li>• Network Interface TCP/IP, RS485</li> </ul>	SUPREMA BIOLITE NET or Equivalent	04	Nos.		

	<ul style="list-style-type: none"> <li>• Wiegand 1 channel (input/output switchable)</li> <li>• TTL I/O 2 inputs for exit switch and door sensor</li> <li>• Internal Relay Deadbolt, EM lock, door strike, automatic door</li> <li>• Ingress Protection Rate IP65 class</li> <li>• LCD 128 x 64 pixel, black &amp; white</li> <li>• Keypad 3 x 4 keypad, 3 navigation keys</li> <li>• Sound and Interface Multi-color LED and multi-tone buzzer</li> <li>• Operating Voltage 12VDC</li> <li>• Size 60 x 185 x 40 mm (W x H x D)</li> </ul>					
71	<p>Supply and installation of UPS Line interactive UPS with 120 minutes backup at 60% Total Load.</p> <ul style="list-style-type: none"> <li>• Output power max.18 kW</li> <li>• Output power factor 0.9</li> <li>• Topology True online double conversion</li> <li>• Parallel configuration Up to 20 units in parallel configuration</li> <li>• UPS type Standalone</li> <li>• Cable entry Rear accessible</li> <li>• Hot swappable batteries and SNMP/Network Enabled</li> </ul> <p>INPUT</p> <ul style="list-style-type: none"> <li>• Nominal input voltage 3 × 380 V / 220 V + N, 3 × 400 V / 230 V + N, 3 × 415 V / 240 V + N</li> <li>• Voltage tolerance</li> <li>• Input distortion THDi ≤ 3 % at 100 % (sine wave)</li> <li>• Frequency 35–70 Hz</li> <li>• Power factor 0.99 at 100 % load</li> </ul>	ABB OR EQUIVALENT/ Local Made	01	Nos.		
72	<p>Supply and installation of <b><u>Tower Base Wi-Fi Network solution</u></b> for its entire Campus (Must Covers the Office area, Hostel area and residential area indoor/outdoor)that can easily integrate able with the existing ICT infrastructure of the Campus</p>	HP or Equivalent	01	Job		
73	<p>Supply and installation of PTCL DRS solution for Internet and Telephone service</p> <p>* For High speed un-interrupted connectivity for internet</p> <p>* Telephone services for better communication students and parents.</p>	PTCL or Equilent	01	Job		

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74	<b>SECURITY SYSTEM</b> Supply and installation of including laying of cable from CP-2 to CP-1 data and electric complete in all aspects. Shallow mount road blocker. The Housing and Blocking element of the road Block system must be deigned in full core steel profile construction with Traffic lights, loop detector, infrared sensor and complete with integrated RFID card reader with following Specifications	Delos/ arm Strong Barrier	02	Nos.		
	<ul style="list-style-type: none"> <li>* Tensile Strength of the steel structure component must be 480-600 n/nm sq. ;</li> <li>* Wall thickness of structure components 10-20mm ;</li> <li>* Blocking height above road level 700mm;</li> <li>* The Electro hydraulic drive unit as well and the electrical PLC -Control must be weather proof locale steel casing for outdoor installation on concrete base (max 20m distance from road block ;</li> <li>* Raising and Lowering time of the blocking element : 3sec to 6sec</li> <li>* The blocking element with the integrated anti deflection device must be electro hydraulic and operated with an electrical motor of adequate size 3 phase.</li> <li>* Working temperature -20°C~ +60°C</li> <li>* Oil tank capacity(L) 60, Oil rate of flow (L/min) 24, Oil Viscosity 32cst(40 °C)</li> <li>* Controlling Signal Relay signal, dry contact signal, RFID</li> <li>* 1 no. push-button set „Up-Stop-Down“ (box-type pendent control ) To be located in the guard house or similar Room.</li> </ul> <p>The system must be integrated with RFID access control system and IP PA system for centralize control/management and monitoring.</p> <p>The system must be supplied with a UPS with 30 min backup</p>					

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75	<b>DATA AND ELECTRICAL CABLING FOR IT INFRASTRUCTURE ( NEW ACADEMIC BLOCK EXTENSION )</b> Supply and installation of Circuit wiring from Main DB of the building to Cable tray using 3 core 2.5 sqmm PVC PVC wires in 25 mm dia PVC conduit with circuit breakers. Complete with all conduit accessories like junction boxes, bends, tees etc.	Pakistan Cable	10	Each		
76	Supply and installation of Circuit wiring from Cable Tray to technology box using 3 x 1.5 sqmm wires in 25 mm dia PVC conduit. Complete with all conduit accessories like junction boxes, bends, tees etc.	Pakistan Cable	18	Each		
77	Same as above but wiring from power socket point to power socket point.	Pakistan Cable	18	Each		
78	Supply and installation Circuit wiring from Technology box to Projector with 3 x 1.5 sqmm wires in 25 mm dia PVC conduit above false ceiling / concealed in wall. Complete with all conduit accessories like junction boxes, bends, tees etc.	Pakistan Cable	18	Each		
79	Supply of 3C, 4Sqmm PVC / PVC Flexible Cable From Main DB to 16A Power Sockets for ICT Rack	Pakistan Cable	1	Each		
80	Supply of 300 x 300mm floor mount 14AW Gmetal Technology box with 1 number of universal power socket and two number of RJ45 type face plates	Clipsil	18	Each		
81	Supply of 100 x 400mm wall mount metal Technology box with 2 number of universal power socket and two number of RJ45 type face plates	CLIPSIL/ COMMSCOPE	13	Each		
82	Supply of 6 x 4 Metal Cable tray with supporting bracket to be installed two feet below ceiling, complete in all respects.		400	Mtr.		
83	Supply of CAT6 UTP RJ45 Simplex outlet, 4 Pair modular snap on mounted, white finish complete with shutter, labels and all accessories.	Panduit	50	Each		
84	Supply of fully loaded 24 port RJ-45 type Cat6 UTP modular Patch Panel intelligent ready equipped with 24xRJ45 information outlet including labelling complete in all respect with built in rear cable manager	Panduit	7	Each		
85	Supply of rack mountable 19" type front cable management at patch panels to provide patch cable management.	Panduit	7	Each		

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86	Supply, Installation and termination at Patch Panel and at outlets, 4-pair Cat-6 UTP Cable LSZH, 23 AWG solid copper conductor to outlet including labelling at both ends.	Panduit	1000	Mtr.		
87	Supply of Telephone Cable Supply of Cat 3 - 30 pair twisted shielded outdoor jelly filled armoured 0.6mm dia. telephone cable including labelling at both ends, from PABX MDF to voice patch panel / voice rack and terminations / connections.	Panduit or Equivalent	500	Mtr.		
88	Supply of 200 Pair Wiring block rack mounted complete with all accessories ,tag and labels	Panduit or Equivalent	03	Each		
89	Supply and installation of LAN Switch: 24 port 10/100 +2 T/SFP LAN base image	Juniper or Equivalent	04	Each		
90	Supply & Installation of 6 port SC Duplex MM Modular Fibre Optic Tray Suitable for 19" rack mount with internal cable /fibre management and min of 2 cable entries Complete in all respect including pigtails/Splice Tray/Blank Adaptor Panel.	Panduit or Equivalent	02	Each		
91	Supply & Installation of 8 Core Indoor/Outdoor OM2 fibre Cable in a 1 inch UPVC conduit	Panduit or Equivalent	1000	Mtr.		
92	The contractor shall be responsible for one year Warranty of all the installed equipment including replacement of any damaged item/equipment. The warranty period shall start after the handing over of the project.	<b><u>At the Contractor's End</u></b>				
93	The Contractor shall provide 2 years SLA (Repair and Maintenance services) for all the equipment. The SLA agreement time will start after the ending of Warranty time.		01	Job		

**I.T.Specialist**

**Engineer**

**Principal/PD**