

**PACKAGE-2**  
**(ACADEMIC BLOCK-1)**

BILL OF QUANTITIES

MAIN SUMMARY

S.NO.	DESCRIPTION	AMOUNT (Rs.)
1	CONDUITS & PIPES	
2	DISTRIBUTION BOARDS	
3	LOW VOLTAGE CABLES AND WIRES	
4	WIRING ACCESSORIES	
5	LIGHTING FIXTURES & FANS	
6	WIRING FOR LIGHTS, FANS & SOCKETS	
7	UPS SYSTEM	
8	CABLE TRAY	
9	EARTHING SYSTEM	
10	VOICE, DATA COMMUNICATION & CCTV CABLING SYSTEMS (Passive Equipment Only)	
11	CCTV SYSTEM	
12	ADDRESSABLE FIRE ALARM SYSTEM	
13	SELF CONTAINED EMERGENCY LIGHTS	
	GRAND TOTAL AMOUNT CARRIED TO FORM OF BID	

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
<b>1</b>	<b><u>CONDUITS &amp; PIPES</u></b>				
a)	Supply and installation of following size internal diameter PVC / uPVC Class-D pipe / Flexible PVC Conduit as race ways with all accessories, recessed / surface on wall / column / under floor, as per drawings and specifications, complete in all respect.				
i	20 mm dia PVC Conduit	5	Rm.		
ii	25 mm dia PVC Conduit	5	Rm.		
iii	38 mm dia PVC Conduit	35	Rm.		
iv	50 mm dia PVC Conduit	85	Rm.		
v	50mm dia uPVC Pipe (Class-D)	5	Rm.		
vi	25 mm dia Flexible PVC Conduit	10	Rm.		
b)	Supply and installation of following size UPVC Pipe Class-D / Road Crossing Sleeves Class-D for Power and Telecommunication Cable (copper / optic fiber). Buried in ground / under roads / under floor as per specification, including excavation for laying of pipe, bricks, warning tape and backfilling with new and fresh sand (6" under and 6" above pipe) etc., (wherever required), as shown on the specifications and drawings, complete in all respect.				
i	2x50mm dia uPVC Pipe (Class-D)	5	Rm.		
ii	2x100mm dia uPVC Pipe (Class-D)	5	Rm.		
c)	Supply and installation of Pull Boxes (Floor / Wall) 16 SWG, Size 450 mm x 300 mm with all installation accessories, as per drawings, specifications and approved brands, complete in all respect.	1	No.		
d)	Supply and installation of Pull Boxes (Floor / Wall) 16 SWG, Size 300mm x 150mm with all installation accessories, as per drawings, specifications and approved brands, complete in all respect.	2	No.		
e)	Providing and Construction of Manhole Size 3'-0" x 3'-0" x 3'-0" deep, 6"thick, concrete 1:2:4 ratio with 3' round heavy duty cast iron cover, 100% water proof, as per specification as shown on the drawing, as per drawings and specification etc., complete in all respect. (For Electrical cables)	1	No.		
f)	Providing and Construction of Handhole Size 2'-0" x 2'-0" x 2'-0" deep, 6"thick, concrete 1:2:4 ratio with 2' round heavy duty cast iron cover, 100% water proof, as per specification as shown on the drawing, as per drawings and specification etc., complete in all respect. (For Telecommunication cables)	1	No.		
	<i>Amount Carried to Summary</i>				

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
2	<b><u>DISTRIBUTION BOARDS</u></b>				
a)	Supply, installation, testing and commissioning of following wall mounting / floor standing surface type Sub Main Distribution Board (SMDB) and Distribution Boards (DB's) made with 16 SWG sheet metal, dust protected, vermin proof housing coated with approved color having all the necessary switching, energy analyzer etc., protections, as per drawing and specification, complete in all respect.				
i	SMDB-AB	1	No.		
ii	DB-GF	1	No.		
iii	DB-1F	1	No.		
iv	UDB-GF	1	No.		
v	UDB-1F	1	No.		
b)	Supply, installation, testing and commissioning of following Isolators in 16 SWG sheet steel enclosure with neutral and earth terminal strips, including all mounting accessories as per specifications and drawings, complete in all respect.				
i	20A, SPN Weatherproof type Isolator	8	No.		
<i>Amount Carried to Summary</i>					





## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
5	<b><u>LIGHTING FIXTURES &amp; FANS</u></b>				
a)	Supply, installation, testing and commissioning of following Light fixtures complete with starters, Electronic ballast (unless mention otherwise), lamps, lamp holders, drivers, mounting accessories etc., as per drawings and specifications, complete in all respects. Lighting fixtures sample must be submitted to consultant for approval. Note: Refer light fixtures drawings for complete light fixtures details.				
i	Surface Ceiling mounted LED Downlight Fixture (IP-20), PF>0.9, 4000K with Aluminum Profile housing and 1x25W LED lamp	112	No.		
ii	Surface Ceiling mounted LED Downlight Fixture (IP-44), PF>0.9, 4000K with Aluminum housing and 1x10W LED lamp	36	No.		
iii	Surface Ceiling mounted LED Batten Light Fixture (IP-20) with Polycarbonate Painted Steel housing and 1x40W LED lamp	156	No.		
iv	Wall / Surface mounted LED Wall Light Fixture (IP-65), PF>0.9, 3000K with Polycarbonate housing and 1x23W LED lamp	26	No.		
v	Wall / Surface mounted LED Decorative Wall Light Fixture (IP-20), PF>0.9, 4000K with 1x20W LED lamp	14	No.		
vi	In Floor mounted LED Spike Planter Light Fixture (IP-65), PF>0.8, 3000K with Polycarbonate housing and 1x7W LED lamp	13	No.		
b)	Supply, installation, testing and commissioning of following types of fan, including all connecting accessories, flexible wire etc. as per drawings and specifications, complete in all respects.				
i	56" dia Sweep Ceiling Fan complete with hook	118	No.		
ii	24" dia Sweep Wall Bracket Fan	1	No.		
	<i>Amount Carried to Summary</i>				

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
<b>6</b>	<b><u>WIRING FOR LIGHTS, FANS &amp; SOCKETS</u></b>				
a)	Supply, laying, tagging, testing and commissioning of Circuit wiring from DB to Switchboard including wiring between switch on the same circuit with 2x2.5 sq.mm + 1x2.5 sq.mm as ECC single core copper conductor PVC insulated wires in 3/4" dia PVC conduit, surface / recessed in wall, column, ceiling etc., including with all conduit accessories, as per drawing and specification, complete in all respect.	39	No.		
b)	Supply, laying, tagging, testing and commissioning of Point wiring from Switch Board to Light/fan Point with 3x1.5 sq.mm. single core copper conductor PVC insulated wires in 3/4" dia PVC conduit, surface / recessed in wall, column, ceiling etc., including with all conduit accessories, as per drawing and specification, complete in all respect.	293	No.		
c)	Supply, laying, tagging, testing and commissioning of Point wiring from Light point to Light point with 3x1.5 sq.mm. single core copper conductor PVC insulated wires in 3/4" dia PVC conduit, surface / recessed in wall, column, ceiling etc., including with all conduit accessories, as per drawing and specification, complete in all respect.	183	No.		
d)	Supply, laying, tagging, testing and commissioning of Circuit wiring (for Emergency / Exit Lights) from DB to Ist. Light Point with 2x2.5 sq.mm + 1x2.5 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit surface / concealed / recessed in wall, column, ceiling etc., including with all conduit accessories, as per drawing and specification, complete in all respect.	2	No.		
e)	Supply, laying, tagging, testing and commissioning of Point wiring (for Emergency / Exit Lights) from Light Point to Light Point with 2x2.5 sq.mm + 1x2.5 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit surface / concealed / recessed in wall, column, ceiling etc., including with all conduit accessories, as per drawing and specification, complete in all respect.	34	No.		
f)	Supply, laying, tagging, testing and commissioning of wiring for 13A Switch Socket outlet with 2x2.5 sq.mm + 1x2.5 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit, surface / recessed in wall, column, ceiling, under floor etc., including with all conduit accessories, as per drawing and specification, complete in all respect.				
i	DB to Socket outlet	11	No.		
ii	Socket outlet to Socket outlet	37	No.		

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
g)	Supply, laying, tagging, testing and commissioning of wiring for 13A Switch Socket outlet with 2x4 sq.mm + 1x4 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit, surface / recessed in wall, column, ceiling, under floor etc., including with all conduit accessories, as per drawing and specification, complete in all respect.				
i	DB to Socket outlet	13	No.		
ii	Socket outlet to Socket outlet	62	No.		
h)	Supply, laying, tagging, testing and commissioning of wiring for 13A Switch Socket outlet (for Water Cooler) with 2x4 sq.mm + 1x4 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit, surface / recessed in wall, column, ceiling, under floor etc., including with all conduit accessories, as per drawing and specification, complete in all respect.				
i	DB to Socket outlet	4	No.		
j)	Supply, laying, tagging, testing and commissioning of wiring for 20A DP Switch / Flex Outlet (for Water Heater / Exhaust Fan / Projector) with 2x4 sq.mm + 1x4 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit, surface / recessed in wall, column, ceiling, under floor etc., including with all conduit accessories, as per drawing and specification, complete in all respect.				
i	DB to 20A DP Switch	16	No.		
ii	DP Switch to Flex Outlet	24	No.		
k)	Supply, laying, tagging, testing and commissioning of wiring for 20A SPN Isolator (for Split AC) with 2x6 sq.mm +1x6 sq.mm as ECC single core copper conductor PVC insulated wires in 25mm dia PVC conduit, surface / recessed in wall, column, ceiling, under ground etc., including with all conduit accessories, as per drawing and specification, complete in all respect.				
i	DB to 20A SPN Isolator	8	No.		
	<i>Amount Carried to Summary</i>				

BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
7	<b><u>UPS SYSTEM</u></b>				
a)	Supply, installing, testing and commissioning of True Online Double Conversion UPS rating 20 kVA Three Phase in, Three Phase out, minimum 0.9 output power factor with 10 minutes battery backup, batteries with related DC cables from UPS to batteries, external By-pass and all accessories as per specification and drawings, complete in all respect.	2	No.		
<i>Amount Carried to Summary</i>					

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
8	<b><u>CABLE TRAY</u></b>				
a)	Supply, fabricating, erecting, fixing and installing of following size of base perforated Cable Tray with sun cover, Fabricated with 14 SWG MS Sheet steel Hot dip Galvanized including all installation accessories (Hot Dip Galvanized) (ensure 80um microns) such as appropriate sizes and lengths of MS Rod / Angle Iron Supports and Rawl Bolts, including cutting, welding, jointing and necessary required hardware etc. Complete in all respect as shown in drawings and specification or as directed by the Engineer.				
i	100 mm x 50 mm (0'-4" x 0'-2")	30	Rm.		
ii	150 mm x 50 mm (0'-6" x 0'-2")	80	Rm.		
<i>Amount Carried to Summary</i>					

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
9	<b><u>EARTHING SYSTEM</u></b> Supply, installation, testing and commissioning of following items for complete earthing system including all connecting accessories as per drawings, specifications and as mentioned in General Notes, complete in all respects.				
a)	Supply, installation, testing and commissioning of following items for complete Earthing system, including Bentonite chemical, other all required materials and connecting accessories, boring, labor, tools, transportation etc., as per drawings and specifications, complete in all respects with detailed test reports.				
i	Earth pit with Rod type earth electrode, 3/4" dia and 9 Ft. long copper bonded rod.	1	No.		
b)	Supply, installation, testing and commissioning of following size of PVC insulated Cu. Conductor cable as earth continuity conductor (ECC) installed on surface / in appropriate already installed raceway / in already excavated trench / in already laid pipe, as per specifications and drawings, complete in all respect.				
i	1C, 70 Sq.mm Cu/PVC	10	Rm.		
<i>Amount Carried to Summary</i>					

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
10	<b><u>VOICE, DATA COMMUNICATION &amp; CCTV CABLING SYSTEMS</u></b> <b><u>(Passive Equipment Only)</u></b>				
a)	Supply, installation, testing and commissioning of following Data / Voice Cabinets, for patch panel, Fiber panels, adapter, PDU's, Fans and space for active switches as it may require to complete the entire passive and active network as per the single line diagram, drawings and specifications, complete in all respect.				
i	15U Data Rack with PDU's (800mmx800mm)	2	No.		
b)	Supply, installation, testing and commissioning of Single RJ-45, Cat-6 outlet for Voice with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	4	No.		
c)	Supply, installation, testing and commissioning of Single RJ-45, Cat-6 outlet for Data with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	22	No.		
d)	Supply, installation, testing and commissioning of Dual RJ-45, Cat-6 outlet for Voice & Data with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	4	No.		
e)	Supply, installation, testing and commissioning of Dual RJ-45, Cat-6 outlet for Data with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	30	No.		
f)	Supply, installation, testing and commissioning of Single RJ-45, Cat-6 outlet for Camera with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	8	No.		
g)	Supply, installation, testing and commissioning of Single RJ-45, Cat-6 outlet for Projector with shutter type and 16 SWG back box including tagging, as per drawing and specification, complete in all respect.	14	No.		
h)	Supply, laying, termination, testing and commissioning of CAT 6 - 4 pair cable for Single RJ-45 outlet (Data, Voice, Camera and Projector system) in 25mm dia PVC conduit concealed / surface from each outlet to IDF racks, including tagging and piping with all necessary accessories, complete in all respect.	3,370	Rm.		
j)	Supply, installation, testing and commissioning of 24 port shutter type Cat 6, RJ 45 UTP Patch Panel fully loaded with tool less jacks and rear cable manager, as per drawing and specification, complete in all respect.	4	No.		
k)	Supply, installation, testing and commissioning of 24 port Multi Mode Fiber Patch Panel fully loaded with pigtails etc., and rear cable manager, as per drawing and specification, complete in all respect.	2	No.		

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
l)	Supply, installation, testing and commissioning of 19" front/rear (as required) cable organizer between patch panels and active equipment to provide patch cable management including with all necessary accessories, as per drawing and specification, complete in all respect.	6	No.		
m)	Supply, installation, testing and commissioning of CAT-6 UTP (RJ-45 to RJ-45) for the above Patch Panels including with all necessary accessories, as per drawing and specification, complete in all respect.				
i	CAT-6 (1m) Long Patch Cord	116	No.		
ii	CAT-6 (3m) Long Patch Cord	116	No.		
n)	Supply, laying, termination, testing and commissioning of Cat-5e, 25 pair cable from IDF rack to remaining IDF racks in already laid conduit / cable tray including with all the necessary accessories as per drawing and specifications, complete in all respect.	10	Rm.		
o)	Supply, laying, termination, testing and commissioning of 8 Core Multi mode Fiber Optic Cable from IDF rack to remaining IDF Racks in already installed conduit / cable tray, as shown in drawings including termination and tagging at both ends, as per standard specifications with all termination accessories up to entire satisfaction of IT Engineer.	10	Rm.		
p)	Supply, installation, testing and commissioning of following 19" Tag blocks in Data rack, as per drawing and specification, complete in all respect.				
i	1x10 Pair IDC Block 19" type	2	No.		
q)	Installation, testing and commissioning by Manufacturer Authorized Agent / Dealer and handing over complete Voice & Data System to Owner with Providing Training voice data fuke & OTDR Testing, as build drawing, Rack layouts and certification's Principal, complete equipment's Manual and Warranty Documents to Owners representative.	1	Job.		
<i>Amount Carried to Summary</i>					

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
11	<p><b>CCTV SYSTEM</b></p> <p>Supply, installation, testing and commissioning of following items for CCTV System, described below including all accessories, complete with mounting brackets, installation accessories, wiring etc. as per drawings and specifications, complete in all respect.</p> <p>a) Supply, installation, testing and commissioning of 2 MP IP based fixed box camera with 1/2.8" CMOS 3.3 TO 12mm varfocal lens, power adopter, wall mounted bracket, and IP-65 housing, complete in all respect with fixing accessories, as per drawing and specifications, complete in all respect.</p> <p>b) Installation, testing, commissioning, programming by Manufacturer Authorized Agent / Dealer and handing over complete CCTV System to Owner with providing training, SOP, complete equipment's manual and warranty documents to owners representative.</p>	8	No.		
		1	Job.		
	<i>Amount Carried to Summary</i>				

## BILL OF QUANTITIES

S.NO.	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
12	<b><u>ADDRESSABLE FIRE ALARM SYSTEM</u></b> Supply, installation, testing and commissioning of following items for Addressable Fire Alarm System, described below including all accessories, complete with mounting brackets, installation accessories, wiring etc. as per drawings and specifications, complete in all respect.				
a)	Supply, laying, termination, testing and commissioning of wiring for complete Fire Alarm System with 2C-1.5 Sq.mm shielded FP-200, twisted pair Fire Resistant Cable (2 hrs. rated) in 25mm dia PVC conduit concealed, (M.S conduit for surface.) etc., including any wiring between fire alarm control panel and other's systems control panel's etc. Complete in all respect.	560	Rm.		
b)	Supply, installation, testing and commissioning of Addressable Photoelectric Smoke Detector with base and back box, as per drawing and specification, complete in all respect.	44	No.		
c)	Supply, installation, testing and commissioning of Addressable Photoelectric Heat Detector with base and back box, as per drawing and specification, complete in all respect.	1	No.		
d)	Supply, installation, testing and commissioning of Addressable Manual Pull Station / Call Point (IP-20) with base and back box, as per drawing and specification, complete in all respect.	8	No.		
e)	Supply, installation, testing and commissioning of Addressable Manual Pull Station / Call Point (IP-65) Weatherproof type with base and back box, as per drawing and specification, complete in all respect.	2	No.		
f)	Supply, installation, testing and commissioning of Addressable Sounder (IP-20) with flasher / Strobe and base and back box, as per drawing and specification, complete in all respect.	10	No.		
g)	Supply, installation, testing and commissioning of 02 Loop Addressable Fire Alarm Control Panel (FACP), including all necessary accessories, identification tagging etc. and 3Hrs battery back up. FACP as per drawing and specification, complete in all respect.	1	No.		
h)	Installation, testing and commissioning, Softwear, Programming by Manufacturer Authorized Agent / Dealer and handing over complete Fire Alarm system to owner with providing training, SOP, complete equipment's manual and warranty documents to Owner's Representative.	1	Job.		
	<i>Amount Carried to Summary</i>				

