

SCHEDULE OF SPECIFICATIONS AND QUANTITIES OF ELECTRICAL AND AC WORKS FOR ZONAL OFFICE, SALT LAKE OF UCO BANK AT KARUNAMOYEE IN SALT LAKE, KOLKATA -----	
	GENERAL NOTES
	All equipment and material shall be IS approved. All approvals shall be obtained from Client / Consultant. All equipment and material shall be inspected at manufacturer's works as per relevant IS by the Client or his representative before despatch to site. All vendor drawings shall be approved by the Client /Consultant before fabrication work starts.All Testing and Commissioning shall be as per relevant IS for equipment and IS:732:1989 for the installation. All testing records are to be maintained and submitted for Client's representative.
A.	<u>CIRCUIT CUM POINT WIRING</u>
1	All wiring (P,N,E) shall be 1100 volts grade,FRLS PVC insulated stranded copper conductor wires, single or multi core as called for.
2	All Switches & Sockets shall be of modular design complete with modular plate and suitable sized GI/ moulded boxes as called for and shall be suitable up to 250V, AC / DC supply or as specified.
3	The rates for all point wiring items shall also include supplying and fixing of the following:
4	The recessed Switches & Socket outlet boxes shall be of 16G GI and of the same make / manufacturer as of the switches & sockets. Local make boxes are not to be used.
5	Conduits, shall be PVC (AKG/BEC Make).
6	All circuit & point wiring shall be colour coded & shall have ferruling on either end for circuit identification.
7	All work necessary for wiring a point circuit of any length from the Final Distribution Board to connector via switch and shall include the circuit wiring also except where identified.

8	The rates shall include material & labour for necessary length of circuit and point wiring, earth wiring, rigid and flexible conduiting, bends, junction boxes, pull boxes, screws, washers, check nuts, couplers, saddles, hangers supports, GI pull wire, civil work comprising chipping, cutting chases, fixing conduits & making good or surface clamping of conduit work as the case may be, modular switches, socket outlets, Electronic fan regulators surface or recessed outlet boxes as the case may be, ceiling rose, rigid and flexible conduit (PVC / GI/ MS) as may be required, connectors and terminal blocks of proper rating etc. & sleeves etc. including lugs/ thimbles for terminations.
9	Switch, socket outlet and necessary blank plates wherever required.
10	PVC insulated copper conductor stranded flexible wire of Green colour with yellow bands for earthing of fixtures, outlet boxes and third pin of socket outlet.
11	All wires shall be PVC insulated FRLS copper conductor stranded flexible 1100 volts grade and shall be of approved make.
12	All sockets shall be shuttered type and with earth terminal.
13	Suitable rating of plugs top shall be provided for all splash proof industrial socket outlets.
14	Separate neutral and earthing wire shall be provided for each circuit.
15	Lighting and power circuit to be kept separate.
16	Wiring shall include conduiting and wiring (Phase, Neutral, Earth) of light points/ fan points/ UPS and raw sockets outlets of any length from the distribution board via switch to the point.
ELECTRICAL WORK --(60 KVA ELECTRICAL LOAD IS REQD.)	

Sr. No.	Description	Unit	Qty.	Rate	Amount (In INR)
A	DISTRIBUTION BOARD				
	<p>Providing, installing, testing & commissioning of surface/recessed mountings, Double door 415 volts TPN MCB distribution board of steel steel, 1.6mm thick dust phosphatized and painted, inclusive of 100 amps, tinned copper busbars, earthbar, common neutral link, din bar for mounting of MCB's detachable gland / knock out plate & with built in loose wire box , and superior make terminal connectors for all incoming and outgoing circuits duly prewired with adequate size of PVC insulated copper wires between the bus bars and the MCB's as well as the incomer and upto the terminal connectors/ neutral link and ready for installation of following ways as required.</p>				

	Use 'B' curve MCB's for lighting & small power circuits, 'C' curve for motor duty i.e. for pumps, AC motors, AHU motors, split /casette AC's etc. & 'D' curve for UPS DB's i.e. for computers/ PC's circuit. Main incomer & outgoing circuit MCB's shall be selected accordingly i.e. type B,C & D. Contractor to select the MCB's accordingly as per the nature of the circuit/ load.				
	Each DB shall have separate neutral links of rating not less than 100A for each phase. The main incoming neutral link shall be in addition to three outgoing neutral links and shall be of 125A.				
	UPS DB's shall have a dedicated Earthing link fixed on insulated supports, which will be in addition to body earth link.				
	All internal inter connecting wiring with in the DB's shall be PVC insulated flexible copper conductor FRLS wires of adequate capacity as per the current rating.				
a	12-way TPN DB (POWER DB)	No.	1		
	Incomer :-				
	1 No.63 Amp TPN (10 KA) MCB with 40A DP RCCB (30MA) each phase				
	Outgoing :-				
	30 Nos.16/20Amp (10 KA) SP MCB,				

b	10-way TPN DB (LIGHT DB)	No.	1		
	Incomer :-				
	1 No.40 Amp TPN (10 KA) MCB with 32A DP RCCB (30 MA) each phase				
	Outgoing :-				
	24Nos.10/16Amp (10 KA) SP MCB,				
c	12-way TPN DB (UPS DB)	No.	1		
	Incomer :-				
	1 No.63 Amp TPN (10 KA) MCB				
	Outgoing :-				
	36 Nos.10/16Amp (10 KA) SP MCB,				
d	10 way SPN DB (Emergency DB /server)				
	8Nos. 10-16Amp. SP MCBs as outgoing and 40Amp DP MCB with as incomer.	Nos.	1		
e					
1	Supply, installation, testing and commissioning of sheet metal enclosed 100 A TPN MCCB (25 KA) for 20 KVA UPS . (This shall include cable entry boxes both for incoming and outgoing cable)	Nos.	1		
2	Supply, installation, testing and commissioning of Weather proof sheet metal enclosed 100A TPN MCCB (25 KA).(This shall include cable entry boxes both for incoming and outgoing cable) IP 65 (For 20 HP outdoor unit -1 no.)	Nos.	2		

3	Supply, installation, testing and commissioning of 1.6 mm thickness weather proof polycarbonate enclosures fitted with 32A DP MCB for A.C(Hensel Make) degree of protection IP : 66	Nos.	2		
	TOTAL CARRIED OVER TO SUMMARY				
B	<u>MAIN PANEL AND METER BOARD (CPRI APPROVED)</u>				

	<p>Designing, fabrication, supply, installation, testing and commissionings of front operated cubicle type compartmentalised, front access, free standing on 75MM "I" MS channel, dust and vermin proof (IP 42 degree protection) panel suitable for use at 415V, 3 phase, 4-wire 50Hz system suitable for fault level of required value symmetrical at 415V fabricated from 2mm thick CRCA MS sheets with hinged, gasketted (Metal based neoprene) locable doors having structural reinforcement including 3mm thick gland plates on top and bottom, lifting hooks, GI earth strip of required size with 2 nos earth terminals, 2 nos 230V AC operated 250mm X 250mm size axial fans for exhaust of heat with On-Off toggle switches including 2 coated primer and 2 power coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with seven tank process complete with interconnections etc as per specifications as required.as per the following specifications, (Part IV - Sub-station) and IS: 8623 comprising of followings panel mounting switchgears etc. as required,</p>				
	<p>All switchgears shall have provision for entry of cables from the top or bottom through Cable Alley.</p>				

	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be with heat shrinkable sleeves SMC/DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all outgoing feeders doors and switch handles shall be locable in OFF position.				
	Suitable arrangement shall be made for termination of multiple incoming cables.				
	All kA values indicated shall be ICS breaking capacity				
	Panel :- CPRI approved				
A.	The ELEC PANEL -1 (Light ,Power & AC) shall consists of : -				
	INCOMER				
	1no. 160 Amp 4P On Load ACOS (Automatic Change over switch) with 1 No. 160 Amps,TPN MCCB (35 KA) with extendible rotary handle each thermal over current, instantaneous, Short circuit realease,Earth fault.	nos	1		
	BUSBARS				

	200 amps TPN pole busbar chamber of suitable length with copper busbars. All busbars and interconnections shall be of suitable size copper strips current density of Aluminium shall not be more than 1.6 Amps/sq.mm provide 50% capacity for neutral bus bar.	nos	1		
	INDICATING PANEL				
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF etc. with 3 Nos. current transformers of 160/5A ratio, 15 VA Class-1.0 metering. - 1 sets	nos	1		
	Red / Green / Amber ON / OFF / TRIP indicating lamps with 2A SP MCB backup protection.	nos	1		
	1 set of three phase indicating lamps along with 2A SP MCB backup protection.	nos	1		
	Restricted Earth fault relay with 3 Nos. current transformers of 160/5 ratio, 15 VA Class 5P 10 (Numeric Relay not required.)				
	Undervoltage, Overvoltage & phase reversal relay for persisted voltage of 105-180% & 20-95% of rated voltage. (Numeric Relay not required.)				
	OUTGOINGS :-				
	Capacitor Panel (25 KVAR)				
	One set of (3 Nos.) LED type RYB phase indicating lamps with 2 A SP MCBs for protection.				

	Power factor meter with Automatic P.F.C.R. & CT for unbalanced load - 1 Set.				
	Control MCCBs:				
i.	2 Nos. 32Amp. TP MCB.				
ii.	ON / OFF push buttons (2No. ON & 2 No. OFF)				
iii.	3 No. 20Amp. TP MCB.				
iv.	ON/OFF push buttons (1 No. ON & 1 No. OFF)				
c)	Contactors:				
	Capacitor Duty Contactor with O/L relay for 10 KVAR - 2 Nos.				
ii.	Capacitor Duty Contactor with O / L relay for 5 KVAR-1no.				
	ON / OFF indication lights for each unit 3 Sets.				
	Auto-Manual Switch - 1 No.				
	P.F. sensing cable & control MCB - Lot.				
	Time delay relay resistance, aux, relays A/M selector switch and necessary control for above.				
	all Capacitors are Heavy duty comprising of (1x 5KVAR + 2x10 KVAR)				

	4Nos 100A TPN MCCB (25 kA) terminals suitable to receive cable on one side and wire connection to Bus bars.				
	1 No 63A TPN MCB (10 kA) terminals suitable to receive 4 x 25 sq mm XLPE armoured copper conductor cable on one side and wire connection to Bus bars.				
	4Nos 63A TPN MCB (10 kA) terminals suitable to receive 4 x 16 sq mm XLPE armoured copper conductor cable on one side and wire connection to Bus bars.				
	4 Nos 63/40 A DP MCB (10 kA) terminals suitable to receive 3 x 6sq mm YFY Cable on one side and wire connection to Bus bars.				
	The SDB in electrical panel as described above and specifications complete.	nos	1		
c.	The SDB UPS output shall consists of :				
	Located at UPS room .				
Note:	All MCCB in UPS Distribution Panel Shall be TP + Neutral 200% of rated current with isolation link. There shall be one hole for each cable termination in the busbar link for both phase and neutral.				
	The SDB UPS shall consists of :				
	INCOMER				

	Main Incomer 1no. 100 A TP MCCB (25 KA) and neutral isolation link 200% of rated current. Terminals suitable to receive 5 x 1x 16sq. mm copper cable connection (1 nos per phase and 2 nos. for neutral) on one side and Busbar connection on the other side.	nos	1		
	BUSBARS				
	150 amps TP + 2N busbar chamber of suitable length with Copper busbars. All busbars and interconnections shall be of suitable size copper strips current density of copper shall not be more than 1.6 Amps/ sq.mm.	nos	1		
	INDICATING PANEL				
	3 nos phase indicating lamps (LED type) each backed up with MCB and switch shall be provided for each incomer.	nos	1		
	OUTGOINGS:-				
	2 Nos. 100 A 4P MCB (10 kA) suitable to receive 4 x 16 sq. mm copper cable. (FOR UPS DB)	nos	1		
	Total complete as described above and specifications complete as required.	Set	1		
2	Providing and fixing carbon dioxide (CO2) type fire extinguishers fully charged of following capacity .				
	4KG	Each	4		

3	Providing and fixing OF CEILING MOUNTED MODULAR fire suppression (ABC MAP90 POWDER BASED) fire extinguishers fully charged of following capacity .(Make :-Cease fire or equivalent)				
	5KG (server / ups room)	Each	2		
4	Supply and fixing safety instruction chart in word duly framed with 5mm thick glass as required.(approx.Front area 1.20sq.mt)	Each	1		
5	Supply & fixing in position First Aid Boxes of approved shape and size as required by the local Electrical Inspecting Authority.	Set	1		
6	Supply of Tool Box with all necessary tools for maintenance of electrical installation	Set	1		
7	Providing of rubber mat 1 mtr wide and 6mm thick to withstand 3.3KV dielectric strength as per IS: 5424-1969	Mtr	4		
TOTAL CARRIED OVER TO SUMMARY					
C	Cable Tray and Raceways				
1	Fabricating supplying to site of installation on ceiling/ surface 1.6 mm thick G.I. raceways of height 40 mm and 1.6 mm thick openable cover, totally enclosed, between two lengths of channels and junction box shall be nut-bolted together to make it dust and water proof. complete with all fixing accessories as required.The cost shall be including all supporting accessories.				

a.	250 mm (wide) x 40 mm (height)	RM	70		
b.	150 mm (wide) x 40 mm (height)	RM	50		
2	Fabricating supplying to site of installation, 2 mm thick G.I sheet 5 sided junction boxes with 3.0 mm thick MS cover including providing rubber gasket between the cover and the junction box, brass screws height as per site condition and totally enclosed, welded. the channel and junction box shall be seam welded together to make it dust and water proof. Proper cutouts shall be made in the side walls for raceway entry.				
a.	300 mm x 300 mm x 50 mm (height)	Nos.	6		
b.	200 mm x 200 mm x 50 mm (height)	Nos.	8		

4	Design manufacture , supply and fixing in position the cable trays of the following sizes for supporting 1.1 KV grade armoured/unarmoured aluminium /copper conductor cables. Fabricate the cable trays from perforated 1.6/2mm thick M.S. CRCA sheet duly galvanised with expansion coupler plates duly galvanised, with bolts, washer and nuts. Knock out holes for cable connections as per approved design. The tray should comply with the specification of NEC (National Electric Codes) and NEMA (National Electric Manufacturers Association). The steel should be as per IS:226 and galvanising as per IS :2629/BS 729/ASTM 123. The rate shall also include for supporting steel , fish plates , fixing accessories , nuts bolts, supporting down rods , dash fastener, cutting the RCC etc. complete as required. (The horizontal and vertical bends, T's should be factory fabricated and the rate should include for the same)				
a.	150 mm wide x 40 mm x 1.6 mm thk	RM	60		
b.	300 mm wide x 40 mm x 2.0 mm thk	RM	40		
	TOTAL CARRIED OVER TO SUMMARY				
D	WIRING				

1	Wiring for Light Point with 20 mm PVC pipe with 2 x 2.5 sq. mm + 1 x 1.5 sq.mm copper conductor FRLS wires only instead of 1 x 1.5 sq. mm+1 x 1.5 sq.mm. green earth wire for light Points as reqd. complete with modular switch with front plate.				
a	One light controlled by 6A switch	Nos.	25		
b	Two light controlled by 6A switch	Nos.	15		
c	Three light controlled by 6A switch	Nos.	12		
d	Exhaust fan and Wall bracket point with 6 A sw complete with modular switch plate & M.S conceal box & 3 pin ceiling rose	Nos.	22		
e	Ceiling Fan point complete with modular switch plate & M.S conceal box & 3 pin ceiling rose	Nos.	4		
f	Call bell point with push type switch, modular plate & M.S. conceal box with buzzer or ding dong type bell	Nos.	1		
2	RAW POINT WIRING-The FRLS wiring shall pass through PVC pipe of 20 mm dia with ISI mark to conceal on wall below false ceiling mending good all the damage				

a	Supply, laying of circuit line 2x2.5 sq.mm +1 x 1.5 Sq.mm PVC insulated copper wire from MCB type lighting DB to 6 amp plug points (3 nos. 6 Amps plugs to be connected from one circuit line)through HMS grade PVC conduit	Mts.	600		
b	Modular type 6 A switch with 6A 5 pin socket . Mounted on suitable front plate	Nos.	36		
c	Wiring for Power Point 6/16 A Switch & Socket with 25mm PVC pipe with 2x 4 Sqmm wire and 1x4 Sqmm green earth wire for Power Points as reqd. This line has to be drawn from the power DB. (02 nos. plugs to be connected with one circuit)	Mtr	500		
d	Modular type 6/16 A switch. with 16A ..5 pin socket ,Mounted on suitable front	Nos.	45		
e	Wiring for AC points with 3 x 2.5 sq mm FRLS PVC insulated stranded copper conductor wires in FR PVC conduits in F.ceiling/ walls/ Ceiling as directed including providing 16 amps flush type switches 16 amps 3 pin socket near inline fan, 5 sided G.I. boxes for housing switches and 16 amps 3 pin socket outlet and earthing and complete as required.(including body earth for GI boxes) (3Nos to 4 Nos point in one circuit)	Nos.	11		

f	Wiring for COMPUTER points with 3 x 2.5 sqmm PVC insulated ,1100V grade copper conductor FRLS wires in 1.6mm thick FR PVC conduit from UPS DB to computer points.Each point to have 2 nos. 6A 3 pin modular type socket at below the top of table/counter and controlled by one 10/16A modular Switch and one 10A indicator at above the table top in wooden partion with all accessories. Inner / outer plates, metal box etc and to be fixed on wooden partion/ by grouting on wall etc as per site requirement.	Nos.	36		
g	Same as above but looped from first point & from first point to second point in a circuit including first point.	Nos	36		
3	UPS WIRING				
a	Wiring for Power Point 6/16 A Switch & Socket with 25mm PVC pipe with 2x2.5 Sqmm wire and 1x1.5 Sqmm green earth Copper wire &FRLS type through PVC casing 20 mm dia 16 SWG with ISI mark to lay from UPS MCB DB to plug point board	Mtr	550		
b	Supply and fixing of 2 x 6 Amps 5 pin socket + 1 x 16 amps 6 pin socket in single board (under table) + 1 x 16 A switch (Modular switch + socket) in another board above table as per direction	Set	36		

c	Do- but 3 x 6/16 , 6 pin socket with three control switch to provide near HUB Rack and line printer to be connected from UPS power.	Set	1		
d	Supplying, installation of UPS incoming 32 Amps industrial socket with 32 Amps TPMCB (2 nos. for out going and 2 nos. for incoming)	Nos.	4		
TOTAL CARRIED OVER TO SUMMARY					
E . i	TELEPHONE- LOW VOLTAGE SYSTEM				
1	Supplying, laying and connection of telephone points with 2 pair 0.51 sq.mm tinned Cu conductor through LMS PVC conduit ISI mark from telephone point to Krone DB complete with RJ 11 telephone socket modular type in PVC concealed box.	Nos.	8		
2	Do- 10 pair 0.51 sq.mm copper conductor telephone cable in 20 mm dia PVC pipe	Mtr.	100		
3	Supply, fixing and connection of 10 pair KRONE connector DB complete with PVC moulded Telephone DB box with locking system	set	1		
4	Supply & Connecting Telephone Handset.Beetal M51 or C51 black Colour Corded land line phone	set	6		
TOTAL CARRIED OVER TO SUMMARY					

E.ii	COMPUTER LAN WORKS				
1	Providing & Laying Wiring for Data points From server to computer Table CAT 6E Cable. (Make : Cat 6e D -Link)	Mtr.	650		
2	Providing & Fixing modular type RJ - 45 I/O Box Single Outlets in Complete.(RJ45 socket,Patch Panel, Patch Cord)	Nos.	36		
3	Supply ,installation of UTP cable in prelaidd PVC conduit	Mtr	650		
4	Supply,installation of UTP cable patch chord 2 mts. Long including termination and socketing	no	36		
5	Supply and installation of 9U Metal rack HCL	no	1		
6	Supply and installation of Cat-6-24 port patch panel	no	1		
7	Supply and installation of UTP cable patch chord 1 mt , including terminating and socketing Digi Link	no	36		
8	Providing and laying PVC pipe complete as reqd.				
a	20 mm	Mtr.	350		
b	25 mm	Mtr.	250		

	TOTAL CARRIED OVER TO SUMMARY				
F	FIXTURES WITH ACCESSORIES .				
1	Supply and fixing 2'-0"x2'-0" Surface LED (Wipro /PHILIPS/ HAVELLS make)	Nos.	24		
2	Supply and Fixing of 1x36/40 Watts 4' length Slim Hunging LED Tube Light (Philips/Wipro/ HAVELLS Make)	Nos.	3		
3	Supply and Fixing of 1x36/40 Watts 2' length Slim Tube Light for Coffe Lights Philips/Wipro / HAVELLS Make) (toilet)	Nos.	8		
4	Supply and Fixing of Modular Downlighter of 170mm size with 14 watts Led Fixtures. Philips/Wipro / HAVELLS Make	Nos.	25		
5	Supply and Fixing of 9" heavy duty exhaust fan with louvre in toilet / pantry inclusive of hole cutting in the wall and finished with plastering complete	Nos.	4		
6	Supply and Fixing of Wall Mounted fan complete with all fitting and mending good all damages	Nos.	24		
7	Supply and Fixing of Ceiling Hung fan complete with all fitting (regulator) and mending good all damages	Nos.	2		
	TOTAL CARRIED OVER TO SUMMARY				

G	GLOW SIGN BOARD				
1	Supplying, laying of main line with 2 x 2.5 sq. mm + 1 x 1.5 sq. mm through M.S conduit from main panel to glow sign board	Mtr	50		
2	Supplying , fixing of 16 Amps DP MCB at main entrance with Glow sign board timer (24 hours in original housing)	set	2		
	TOTAL CARRIED OVER TO SUMMARY				
H	EARTHING				
1	Providing and fixing in position the following copper / G.I strips in heat shrinkable black colour PVC sleeves for only neutral / dedicated earthing strips and wires including providing, laying in Ground / tray / Conduit pipe with all fixing accessories and effecting proper connections.				
a	G.I tape 25 mm x 6 mm with proper clamps (BODY EARTHING FOR SDB PANEL)	RM	60		
b	Copper tape 25mm x 6 mm with proper clamps	RM	25		
c	Copper wire 8 SWG	RM	200		
d	Copper 12 SWG	RM	100		

2	Supply, laying, effecting, proper connections, testing & commissioning of the following sizes of 1.1 KV unarmoured PVC insulated PVC sheathed copper conductor cables conforming to IS : 1554 Part I - 1976 with latest amendments laid over MS supports in existing RCC ducts /Laid in ground /laid on Cable Trays including clamping the cables to supports in an approved manner as required complete with all accessories.				
a	1C x 10 sqmm. unarmoured PVC insulated PVC Sheathed copper conductor cable. (For Server rack & UPS Earthing)	RM	88		
b	1 x 6 Sq. mm PVC insulated copper conductor wire (Green Colour) (For ups battery/rack)	RM	60		
3	Supplying and making terminal joints for the following size of 1.1 KV PVC insulated copper conductor armoured cables including providing heavy duty copper terminal crimping lugs, solder, insulation tape, approved sealing epoxy compound, double compression brass cable glands, effecting gland connec-tions and effecting terminal connections to the equipment complete as required.				
	1C x 10 sqmm. unarmoured PVC insulated PVC Sheathed copper conductor cable.	Jt	25		

4	Supply, installation, commissioning and testing of Teksai 343 Cu. Or Equivalent (Pipe-in-Pipe Technology) EC Grade Copper Spec: 3 mtr Long/40 mm dia./2 mm wall thickness /Terminal-32 x 6 mm EC Grade K Type Electrolytic Copper Earthing 92-97% Purity with CI Chamber Cover. (For UPS)	Nos.	2		
5	Supply,installation,commissioining and testing of Teksai 350 GI or Equivalent (Pipe-in-Pipe Technology) Spec:3 mtr Long/50 mm dia/2.89mm wall thickness /Terminal-32 x 10 mm Inner Pipe / Outer pipe 250-100 micron galvanized. With C.I Chamber Cover. Each pit installation test certificate to be submitted after measurement of earth resistance as per the provision in IS3043. (Panel earthing) (For ELECTRICAL PANEL / UPS BODY).	Nos.	2		
6	Supply, installation, testing and commissioning of sheet metal enclosed 250 x 200 x 150 (D) mm insulated earth distribution board with 1 nos. 32 x 6 mm copper tinned earth bars suitable for 10/12 nos connections complete with all fixing accessories as required.	Nos.	1		
7	Supplying and laying of the following sizes of Medium duty G.I Pipes below paved area including chase cutting and back filling. For earthing				
	75 mm dia	RM	10		

	TOTAL CARRIED OVER TO SUMMARY				
I	CABLES AND CABLE END TERMINATION				
1	Wiring for sub main in FRLS PVC conduit with the following sizes of FRLS insulated, 1100V grade copper conductor wire in surface /recessed on wall/ floor/ ceiling as required.				
a	2 x 10 sq.mm + 1 x10 sq.mm (For VRV / VRF DB)	RM	130		
2	Supply and laying, effecting proper connections, testing & commissioning of the following sizes of 1.1 KV armoured/ unarmoured PVC insulated PVC sheathed aluminium /copper conductor cables conforming to IS :1554 Part I - 1976 with latest amendments laid over MS supports in existing RCC ducts/ laid in ground /laid on Cable Trays including clamping the cables to supports in an approved manner as required complete with all accessories.				
a	3.5 c x 120 sq.mm Al Ar. XLPE cable . (MAIN INCOMER)	RM	75		
b	4c x 35 sq.mm Al Ar. XLPE cable. (For UPS INCOMER ENCLOSURE)	RM	60		
c	4c x 16 sq.mm Al Ar. XLPE cable. (For AC outdoor unit and Power DB)	RM	70		

d	4 c x 10 sq.mm Al Ar. XLPE cable. (For Light DB)	RM	45		
e	4 c x 10 sq.mm Cu Ar. XLPE cable (For UPS DB)	RM	28		
f	1C x 16 sqmm. unarmoured PVC insulated PVC Sheathed copper conductor cable. (For 20 KVA UPS INCOMER)	RM	30		
3	Supplying and making terminal joints for the following size of 1.1 KV PVC insulated copper/Aluminium conductor armoured/unarmoured cables including providing heavy duty copper terminal crimping lugs, solder, insulation tape, approved sealing epoxy compound, Single/double compression brass cable glands, effecting gland connections and effecting terminal connections to the equipment complete as required.				
a.	3.5 c x 120 sq.mm Al Ar. XLPE cable. (MAIN INCOMER)	Jt	4		
b	4c x 35 sq.mm Al Ar. XLPE cable. (For UPS INCOMER ENCLOSURE,)	Jt	6		
c	4c x 16 sq.mm Al Ar. XLPE cable. (For AC Outdoor unit & Power DB)	Jt	4		
d	4c x 10 sq.mm Al Ar. XLPE cable. (For LIGHT DB)	Jt	4		
e	4 c x 10 sq.mm Cu Ar. XLPE cable. (For UPS DB)	Jt	4		

f	1C x 16 sqmm. unarmoured PVC insulated PVC Sheathed copper conductor cable. (For 20 KVA UPS INCOMER)	Jt	2		
	TOTAL CARRIED OVER TO SUMMARY				
J.	FIRE DETECTION SYSTEM (CONVENTIONAL)				
1	Providing and fixing in position 1.6mm thick M.S. outlet boxes for housing smoke detectors/heat detectors including providing 3 mm thick hylam sheet cover as required				
a.	75mm x 75mm x 75mm	Nos	16		

2	Supplying, laying, testing and commissioning of 2C x 1.5 sq mm of Low Smoke Zero Halogen Silicon Insulated Fire Survival Cable with Drain Wire, solid copper conductor cable approved by LPCB as per BSEN 50200:2015 PH 120 (Fire, Mech Shock & Water 120 Minutes @ 830 deg Celcius, Fire & Mech Shock every 5 Min for 2 Hours- Both test conducted on same sample) and BS-6387 CWZ The cable shall sustain 950 deg. C. For 3 hours approved along with accessories/ termination glands and all necessary materials to complete. The cable shall be approved for. The cable shall be BS EN 60332-1-2:2004 for Bunched Flame Retardancy (installed as a single or bunched cable self extinguishes leaving the upper cable sheath unaffected showing the cable does not propagate fire). Cable shall be guaranteed for 10 years from the date of manufacture marked on the cable.	RM	155		
3	Supply, installation, connecting, testing and commissioning of Smoke Detectors (Optical) with blinking LED etc as required complete. (approved make series 65)	Nos	15		
4	Supply, installation, connecting ,testing and commissioning of Heat Detectors as required complete. (Rate of rise cum fixed type) (approved make series 65)	Nos	1		
5	Supply, installation, connecting, testing and commissioning of Hooters (30 M range) in suitable size of M.S. box. as required complete.	Nos	2		

6	Supply, installation, connecting, testing and commissioning of Manual Call Push button with Hammer etc.in suitable size of M.S as required complete.	Nos	2		
7	Supply, installation, connecting, testing and commissioning of Remote Indicators with LED Display to be attached with the Detectors as required complete provide suitable M.S Box to house the indicator.	Nos	10		
8	Supply, installation, connecting, testing and commissioning of monitor module.	Nos	1		
9	Supply, installation, connecting, testing and commissioning of 4 Zone Fire Control Panel as per specifications mentioned elsewhere in the Document complete as required. The Fire Panel shall also have necessary control relay modules to switch off the AC unit/ AHU's supply/ Fire Damper in case of Fire. The Contractor shall provide necessary relay for each unit to switch it off in case of fire.				
a.	4 Zone Control Panel	Nos	1		
	TOTAL CARRIED OVER TO SUMMARY				
k.	<u>PUBLIC ADDRESS SYSTEM</u>				

1	Providing and fixing in position the following FRLS PVC heavy duty conduits including all accessories concealed/exposed in F.Ceiling/Wall complete as required including 1.6/2.0 mm thick PVC junction or pull boxes with 3mm thick perspex sheet cover plate complete with 1.6 mm dia G.I. pull wires in the length of conduit.				
b.	25 mm dia conduit (1.6 mm wall thickness)	RM	150		
2	Providing and fixing in position the following G.I. flexible conduits including all accessories				
a.	1.6mmwall thickness 20mm dia	RM	25		
3	Supply, installation, testing and commissioning of following Philips (BOSCH) make Music Accessories / Equipments.				
a.	Ceiling Speaker Unit 6 Watts LHM 0606/10	Nos.	14		
b.	Power Amplifier, 120 Watts with output transformer etc. complete. Plena Range	Nos.	1		
c	4 Zone call station	Nos.	1		
d	Philips (Smooth stepless control, but the control shall be through dimmer switch, the make of	Nos.	5		
e	Philips Microphone unit Cat no LBD 8292	Nos.	1		
f	Equipment Rack complete with monitor unit, speaker, power supply control etc. President	Nos.	1		
g	Main Termination Box	Nos.	1		
4	shielded flat type Speaker Cable in existing conduit	RM	200		

	TOTAL CARRIED OVER TO SUMMARY				
L	Buy Back of all existing electrical fittings, fixtures, all equipments, wires (-)				
	GRAND SUMMARY OF ELECTRICAL, FIRE DETECTION , PUBLIC ADDRESS SYSTEM WORKS				
Sl. no	Description	TOTAL AMOUNT (Rs.)			
A.	DISTRIBUTION BOARD				
B.	MAIN PANEL AND METER BOARD				
C.	CABLE TRAY AND RACEWAYS				
D.	WIRING				
E. i	TELEPHONE-LOW VOLTAGE SYSTEM				
E.ii	COMPUTER LAN WORKS				
F.	FIXTURES WITH ACCESSORIES .				
G.	GLOW SIGN BOARD				
H.	EARTHING				
I.	CABLES AND CABLE END TERMINATION				
J.	FIRE DETECTION SYSTEM (CONVENTIONAL)				
k.	PUBLIC ADDRESS SYSTEM				
L	LESS BUY BACK (-)				

GRAND TOTAL ELECTRICAL WORKS , CARRIED OVER TO SUMMARY					
AIR CONDITIONING WORKS					
1	Supply of units --HITACHI / DAIKIN	QTY	UNIT	RATE	AMOUNT
a	4.0 TR CASETTE AC	3	No		
b	1.5 TR SPLIT AC	2	No		
c	2.0 TR SPLIT AC	1	No		
	TOTAL				
2	ANCILLARY WORK				
2.1	Installation of units				
a	1.5 TR SPLIT AC (Copper Condenser Coil),	2	Nos		
b	2.0 TR SPLIT AC (Copper Condenser Coil)	1	Nos		
c	4.0 TR C ASETTE AC (Copper Condenser Coil)	3	Nos		
2.2	Frame Work:				
a	Fabrication, supply and installation of painted MS base stand	8	Nos		

b	Copper Refrigerant Piping for 4.0 TR / 2.0 TR (beyond 3rmt per AC) with 6mm thick cross link polyethelyne nitrile rubber insulation on pipes & supports accessories,etc.	90	Rmt		
c	Gas Charge of Refrigerant (R -22)	85	kg		
d	Supply & Fixing of Acoustic insulation of ducting from inside with 25mm thick fibre glass and tissue paper with perforated aluminium foil and GI screw.	95	rmt		
e	Electrical Control Cable Shielded, to be connected bewtween Indoor & Outdoor unit for communication purpose, along with supports	95	Rmt		
f	HDPE Drain Piping of 25 mm dia, with Nitrile rubber insulation to drain out condensate drain water.	100	Rmt		
g	Supply & installation of Wall Mounted voltage stabilizers 4.0 KVA.	3	Nos.		
	TOTAL AMOUNT FOR A.C ANCILLARY WORK				
	TOTAL AMOUNT FOR AC WITH ANCILLARY WORKS , CARRIED OVER TO SUMMARY				

