

**BILL OF QUANTITY FOR ELECTRICAL WORK FOR INDIAN BANK, MEERUT CANTT BRANCH**

**ELECTRICAL WORKS**

S. No.	DESCRIPTION OF WORKS	UNIT	QTY	RATE	AMOUNT
<b>A.</b>	<b>POINTS&amp;WIRING</b>				
1	<b>LIGHTSPOINTS</b>				
1	Wiring for light point/ fan point/ wall fan point/ exhaust fan/ light sockets etc. with 1.5 sq mm. PVC insulated 1100 V Grade copper conductor(FRLS)wires&1.5sq.mm.copperearthwireinconcealed/surfaceusing16SWGMSconduits,accessoriessuchas bends, tees, saddles, draw boxes, mounting boxes, inner plates, cover plates, ceiling rose etc. (wherever required) and chromium plates brass screws/ rowel plug etc. The circuit wiring starting from DB to point control box/ switch box using 2 X 2.5 sq.mm PVC insulated 1100V grade multi stranded copper conductor wire & 2.5sq.mm. PVC insulated earth wire (color code to be used). (Flexible conduit/ elbow not allowed). The conduit to be laid in ceiling with proper clamps/ wall/ floor and filling the chase with cement mortar and finishing the same in original form/ wooden partition/ above false ceiling with proper clamps etc. all complete.				
	(Wherever required as per standard specifications).				
	i) Each circuit shall have independent earth wire.				
	ii) Each point shall be earthed.				
	iii) Circuit wiring is to be included in point wiring rates.				
i	Primary points controlled by one 6amp. Modular switch.	Nos.	50		
ii	Secondary light points controlled by one 6amp. Modulare switch.	Nos.	25		
iii	One call bell point with ceiling rose/6amp. 3pin sockets controlled by one 6amp. Push Modular switch. With call bell	Nos.	2		
iv	One wall fan/ceiling/exhaust fan point with 6-amp 3pin socket controlled by one 6amp.Modularswitch.The switch should beat Switchboard level.	Nos.	18		
v	One 5pin socket controlled by one 6amp.Modular switch complete assembly includes plate box etc. Dependent	Nos.	10		
vi	Same as serial no1 but using 2*2.5+1*2.5Sq.mm Copper Conductor FRLS wires from DB to first 6A, 5 Pin modular socket controlled by one 6A switch and looped to the nearest second point with same 2*2.5 + 1*2.5 Sq.mm copper conductor wires FRLS insulated1100Vgrade(max3pointspircircuit).				
a	Primary Point	Nos.	20		
2	<b>POWERPOINTS</b>				
	Same as serial no.1, but wiring for 16 Amp, 6-pin sockets by using 2*4 sq.mm. PVC insulated 1100 V grade copper conductor wire with independent 1*4.0 sq.mm earthwire from D.B. to first point 1 <sup>st</sup> socket and 1 <sup>st</sup> to 2 <sup>nd</sup> , socket with 2*2.5 sq.mm and 1*2.5 earth wire including providing and fixing of 16Amp,6-pin socket with 16Amp.Switch.(Modular type switch/socket/plate etc. complete assembly) max 2 pointspers circuit.				
a)	PrimaryPoint	Nos.	18		
3	<b>ACPOINTSFORINDOOR&amp;OUTDOORUNITS</b>				
3(a)	Same as serial no.1, but wiring for A/C socket by using 2*6 sq.mm. PVC insulated 1100 V grade copper conductor wire and earthing with 1*4.0sq.mm. PVC insulated 1100V grade copper conductor wire with modular type AC box (tiny trip type) with socket complete in all respects controlled by 25/32A SP MCB to be provided near indoor unit. The point starts from DB to stabilizer to the point near the indoor unit including top.Items should be executed after approval from Bank/ Architect.	Nos.	2		
3(b)	Same as serial no.1, but wiring for A/C socket by using 2*4 sq.mm. PVC insulated 1100 V grade copper conductor wire and earthing with 1*4.0 sq.mm. PVC insulated 1100 V grade copper conductor wire of weather proof type AC box with socket complete in all respects controlled by25 A MCBto be provided near outdoor unit. The point starts from DB to the point near the outdoor unit.	Nos.	9		
4	<b>COMPUTERPOINTS(UPS)</b>				
a	Wiring with 2x2.5 sq.mm. + 1x2.5 sq.mm. PVC insulated 1100 V grade multi stranded copper conductor wires in 2 mm thick PVC conduit from UPS DB to computer point. Each point to have 3nos. 6 amps. 5 pin modular type sockets, one 6amps modular switch with all accessories, inner/outer plates, metal box etc. and to be fixed on wooden partitions/by grouting on wall etc. as per requirement at site. The switch should be fixed above the top of counter with indicator and sockets under the counter. b) Same as above but looped from the above 1st point to 2nd, point and 2nd point to 3rd point. (Maximum 3 points in a circuit)				
	Primary Points	Nos.	22		
<b>PART(A)SUBTOTAL</b>					
<b>B.</b>	<b>CONDUITINGFORTELEPHONE,COMPUTER&amp;CONDUITING,WIRINGFORT.V.SYSTEM.</b>				
1	<b>TELEPHONESYSTEM</b>				
1.1	Wiring for VOICE from Jack Panel in data rack to computer workstation with Cat-6 voice cable in PVC conduits of size 20/ 25 mm including providing ferrules at both ends and termination at both ends including providing & fixing frame for Cat-6 with shutter, RJ 45outlet,faceplateandmountingboxcompleteofmodulartype.ThisworkincludessupplyandlayingofCAT-6cableinPVC Conduits throughout the length, from the I/O hub to the point.	Nos.	8		

1.2	Supplying, laying, effecting terminations, testing and commissioning of 0.51mm <sup>2</sup> Cu. Conductor, twisted, colour coded with poly then cap or barrier, telephone cables in the existing tray or in conduit including providing & fixing conduit pipe or cable tray as Required from building tag block to the floor as required.				
a)	Supplying & fixing 20 pair krone tag block with enclosure.	Nos.	0		
b)	P/L20 Pair of PVC insulated PVC sheathed multi core jelly filled arm or ed telephone.	Mtr.	45		
c)	Panasonic Electronic Modular Switching System MODEL NS-300 (Digital IPPBX SYSTEM) For 6 CO Lines 2 Digital Extension and 16 Extensions, with DISA Greeting Message and Extension Caller ID Expand able upto 6co & 32 Extensions.	Nos	0		
d)	MDF with Krone Modules 50 pairs with connector	Nos	1		
2	COMPUTER NETWORKING				
2.1	Wiring for computer networking from Jack Panel in data rack to computer work station with Cat-6 computer cable in PVC conduits of size 20/ 25 mm including providing ferrules at both ends and termination at both ends including providing & fixing frame for Cat-6 with shutter, RJ45 outlet, face plate and mounting box complete of modular type, this work includes supply and laying of CAT-6 Cable in PVC conduits throughout the length, from the I/O hub to the point.	Nos.	22		
2.2	Supplying and fixing 9U (Rack with glass door, opening in the front power panel (horizontal), cable manager 1 lock & key).	Nos.	1		
2.3	Supply, Installation, Testing & Commissioning of 24 port Jack Panel.	Nos.	1		
2.4	Supplying and fixing Patch Cord-2 Meter-(DBPS Mounting Cord)	Nos.	22		
2.5	Supplying and fixing Patch Cord-1 Meter-	Nos.	22		
3	Supply and fixing of 1.6mm thick G.I. Box along with RG6 T.V Coaxial socket with Cover Plate.	Nos.	1		
4	Supply, drawing, connecting, testing and commissioning of T.V Coaxial cable RG6 in conduit.	RM	1		
		PART (B) SUBTOTAL			
C.	CABLES, MAINS & SUBMAINS				
1	Supplying all materials and laying/pulling 1100 volts grade PVC insulated copper conductor wires (FRLS) in MS conduit with all fixing accessories after cutting the floor, wall and the like etc. and plastering the floor level to original. Conduit must be 30mm Below the floor finish level. Items should be executed after approval from Bank/Architect.				
i	2X4sq.mm.+1X4sq.mm.	RM	0		
ii	2X6sq.mm.+1X6sq.mm.	RM	0		
iii	2X10sq.mm.+1X6sq.mm.(Branch UPS DB)	RM	15		
iv	1X10sq.mm.Cu wire for earthing.(UPS Input/Output)	RM	15		
v	Supplying, laying, testing & commissioning of 4.0 C X 10sq.mm. at 1100 volts grade PVC insulated copper conductor armoured cable with 10 gauge earth copper wire including cable send termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification (Light DB).	RM	25		
vi	Supplying, laying, testing & commissioning of 4.0 C X 10sq.mm. at 1100 volts grade PVC insulated copper conductor armoured cable with 10 gauge earth copper wire including cable send termination using appropriate Lugs, Glands, termination accessories, Clamp setc. As required as per specification (Power + AC DB).	RM	10		
vii	Supplying, laying, testing & commissioning of 3.5C x 50sq.mm. at 1100 volts grade PVC insulated aluminum conductor armored cable with 10 gauge earth copper wire including cables end termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification.(Mains)	RM	25		
		PART (C) SUBTOTAL			
D.	DISTRIBUTION BOARD				
	Supplying, installing, testing & commissioning of surface/recessed mountings, Double door 415volts TPN MCB distribution board of steel, 1.6 mm thick dust phosphatized and painted, inclusive of 100 amps, tinned copper bus bars, earth bar, 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 up to the terminal connectors/neutral link and ready for installation of following ways As required.				
	Use 'B' curve MCB's for lighting & small power circuits, 'C' curve for motor duty i.e. for pumps, AC motors, window and split AC' set c.&'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 wires of adequate capacity as per the current rating. Inside each DB, a DB chart is to be fixed. Items should be executed after approval from Bank/Architects				
a	4-way TPN DB (LIGHT DB)	No.	1		
	Incomer:-				
	1 No. 63Amp TPN (10KA) MCB with 40ADP MCB (100MA) each phase				
	Outgoing:-				
	6 Nos. 6/10Amp (10KA) SPMCB				
b	4-way TPN DB (Power DB)	No.	1		

	Incomer:-				
	1No.63AmpTPN(10KA)MCBwith63ADPMCB(100MA)each phase				
	Outgoing:-				
	6Nos.10/16/25/32Amp(10KA)SPMCB				
c	4-wayTPNDB(ACDB)	No.	1		
	Incomer:-				
	1No.63AmpTPN(10KA)MCBwith63AMCB(100MA)each phase				
	Outgoing:-				
	6Nos.10/16/25/32Amp(10KA)SPMCB				
d	4-waySPNDBwith2Nos.40A(10KA)DPMCB(For UPS Input)	No.	2		
e	(2+8)-way SPNDB(For UPS Sub DB)	No.	1		
	Incomer:-				
	1No.40AmpDP(10KA)MCBwith25ADPRCCB(100MA)				
	Outgoing:-				
	6Nos.6/10/16/25Amp(10KA)SPMCB				
f	8WaySPN DB for ATM complete with lock & Key Arrangement with40A DP MCB &32 ADP RCCB(100mA) and Outgoing as 4 No's of 6/10/16/25/32 A SP MCB as directed by the engineer in charge for E-Lobby AC- 2 No's and Light.	Nos.	1		
g	6 Way SPNDB for ATM complete with lock & Key Arrangement with 25 ADPMCB & 25ADPRCCB(100mA) and Outgoing as 4 No's of 6/10/16/SPMCB as directed by the engineer in charge for E-Lobby UPS points.	Nos.	1		
		PART(D)SUBTOTAL			
E	(LIGHTFITTINGS&ACCESSORIES)				
	Supplying, installation with hanging support, testing and commissioning of following light fixtures with electronic Ballasts, Tubes, lamps, all fixing materials including connecting wires etc. all complete as per the directions of Engineer-in-charge (All LED Light Fixtures should be covered with minimum 3 Years onsite replacement warranty). Items should be executed after approval from Bank/Architect.				
i	LED 18W tube 4'-0" As specified in tender document or approved by Bank/Architect.	Nos.	12		
ii	FULLGLOW2X2LED36Wslim Smart Panel of make As specified in tender document or approved by Bank/Architect.	Nos.	32		
iii	Supplying, fixing, testing and commissioning of 15 WLED commercial type down lighter of make As specified in tender document Or approved by	Nos.	60		
iv	LED Strip for cove lighting 15W per 5M with driver and necessary installation fittings Led strip light (5mtr.) make as specified in Tender document or approved by Bank/Architect.	Nos.	0		
v	Supply, installation, testing and commissioning of following fans with all fixing materials like white Poly carbonate 2mm Hylem sheet cover, down rods, fan box as required etc. all complete as per the directions of Engineer-in-charge.				
a	Wall mounted fans 400mmdia. Make As specified in tender documentr approved by concerned office in charge.	Nos.	14		
b	Supply & fixing of 230 mm exhaust fan 'Ventilair DX W' with self-closing louvers and plastic body with all accessories etc. complete of make As specified in tender document or approved by concerned office in charge.	Nos.	0		
c	Ceiling Fan-Supply, Erecting, and testing of approved/specified make ceiling fans complete with down rod, canopy, blades and Electronic speed regulator 230-250 volts including connection with all necessary materials as required. Make-Usha	Nos.	2		
		PART(E)SUBTOTAL			
F.	EARTHINGSYSTEM				
1	Supply, Installation, Testing and Commissioning of Maintenance Free Earthing system made up of copper bonded rod of 10 feet length, 23mm dia.(Minimum copper bonding shall be 0.25mm) along with Rod-to Conductor connectors, Earth enhancement material, Pit Cover and other accessories as required and as per specification and other applicable codes (include chamber for earthing, Earthing certificate to be submitted along with the bill).	Nos			
2	Supply, Installation, Testing and Commissioning of Maintenance Free Earthing system made up of copper bonded rod of 10 feet length, 17.2 mm dia. (Minimum copper bonding shall be 0.25 mm) along with Rod-to-Conductor connectors, Earth enhancement material, Pit Cover and other accessories as required and as per specification and other applicable codes(include chamber for earthing, Earthing certificate to be submitted along with the bill).	Nos	2		
3	Providing and fixing of Copper/GI strips in surface or in recess for loop earthing etc. as required.				
i	25mmx3mm copper strip in B-class GI pipe	RM	0		
ii	25mmx5mm GI strip	RM	0		
iii	Providing and fixing 2X8 SWG dia. Cu earth wire in PVC cond uit on surface or in recess for loop earthing along with the existing surface/recess cable as required.	RM	90		
		PART(F)SUBTOTAL			

G.	MAINPANELANDMETERBOARD				
	Designing, fabrication, supply, installation, testing and commissioning of front operated cubicle type compartmentalized, 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 50 Hz system suitable for fault level of required value symmetrical at 415V fabricated from 2mm thick CRCA MS sheets with hinged, gasketed (Metal based neoprene) lockable door shaving structural reinforcement including 3mm thick gland plates on top and bottom, lifting hooks, GI earth strip of required size with 2 no's earth terminals, 2 no's 230V AC operated 250 mm 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 interconnections etc. as per specifications as required. Main panel board of approved make (Should be CPRI Approved, Type of Approval as instructed by the concerned office incharge)				
	As per the following specifications, (Part IV - Substation) and IS: 8623 comprising of followings panel mounting switchgears etc. as required, should be CPRI Approved. IS: 8623 comprising of followings panel mounting switchgears etc. as required, should be CPRI Approved .Note:Type of CPRI testing shall be as per Architect/Bank's instructions. All switch gears shall have provision for entry of Cables from the top or bottom through Cable Alley.				
	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The bus bars insulation shall be with heat shrinkable sleeves SMC/DMC shrouds and bus bar supports shall be used. Padlocking facility shall be provided on all out going feeders' doors and switch handles shall be lockable in OFF position.				
	Suitable arrangement shall be made for termination of multiple incoming cables.				
	All KA values indicated shall be ICS breaking capacity				
	GA drawings shall be got approved by concerned office in charge.				
a.	Floor panel shall consists of:-				
	Items should be executed after approval from Bank/Architect.				
	INCOMER				
	1no.100Amp4POnLoadChangeoverswitchwith1No.100Amps,TPNMCCB(25KA)with extendable rotary handle each thermal over current, instantaneous, Short circuit release, Earth fault.				
	BUS BARS				
	125 amps TPN pole bus bar chamber of suitable length with copper bus bars. All bus bars and inter connections shall be of suitable Size copper strips.	Set	1		
b.	INDICATING PANEL				
	Digital flush type class-1.0 accuracy multifunction meter showing V,A,PF etc. with 3 Nos. Current Transformers of 125/5A ratio,15 VA Class-1.0 metering.-1sets				
	Red/Green/AmberON/OFF/TRIP indicating lamps with 2ASPMCB back up protection.				
	1 set of three phase indicating lamps along with 2ASP MCB back up protection.				
	Restricted Earth fault relay with 3Nos. current transformers of 125/5ratio, 15VA Class 5P10 (Numeric Relay not required.)				
	Under voltage, Over voltage & phase reversal relay for persisted voltage of 105-180% & 20-95% of rated voltage(Numeric Relay not required).				
	OUTGOINGS:-				
	2 Nos 40 ATPN MCB(10kA)terminals suitable to receive cable on one side and wire connection to Bus bars.(For Light DB & Spare)				
	3 Nos 40 ADP MCB(10kA) terminals suitable to receive cable on one side and wire connection to Bus bars.				
	2 Nos 63 ATPN MCB(10kA) terminals suitable to receive cable on one side and wire connection to Bus bars.(for AC and Power DB)				
	The electrical panel as described above and specifications complete.	Set	1		
		PART(G)SUBTOTAL			
H	PUBLIC ADDRESSING SYSTEM				
1	Supply and laying Wiring of 1.5 sq. mm twin core shielded type of speaker cable with Providing and fixing in position the following FRLS PVC conduits including all accessories concealed/ exposed in 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 1.6mm dia G.I. pull wires in the length of conduit.	RM	0		
2	Providing and fixing in position the following G.I. flexible conduits including all accessories				
a.	1.6mm wall thickness 20mm dia	RM	0		
3	Supply, installation, testing and commissioning of following Philips/BOSCH or equivalent make Music Accessories/Equipment's.				
a.	Ceiling Speaker Unit 6 Watts LHM	Nos.	0		
b.	Power Amplifier, 50 Watts without put transformer etc. complete. Plena Range or as approved by the Bank. Capable of taking inputs From USB etc.	Nos.	0		
c.	9U Equipment Rack complete with mounting unit, speaker, power supply control etc. President make suitable for 1x70 watts Amplifier system With all terminating setup.	Nos.	0		
		PART(H)SUBTOTAL			
I	OUTDOOR TYPE GLOW SIGN BOARD WIRING				
a.	Supply laying of Main line with 2x2.5+1x1.5Sq.mm through HMS conduit from main panel	Mtr.	35		
b.	To Glow Sign Board				

	Supply installation of 16Amp.DP MCB at main entrance Glow sign Board with Timer of reputed make	Nos.	2		
	PART(I)SUBTOTAL				
J	GEN SET WIRING				
a.	Supply laying fixing Main power with (3.5 core 35 Sq.mm / As per requirement & load calculation of DG Set)PVC insulated sheathed(Alu/ CU conductor/ Selection based on Load requirement),1100V, grade armored cable complete with 02 nos.8SWG Bear GIwire/As per requirement & load calculation of DG Set	Mtr.	0		
b.	End termination of 3.5 core 50Sq.mm armored cable, complete with brass cable Gland, Alu Lug, PVC tape(Selection based on Load Analysis/As per requirement & load calculation of DG Set/Standard IS Rule)	Nos.	0		
	PART(J)SUBTOTAL				
	GROSS SUBTOTAL(PART A+PART B+PART C+PART D+PART E+PART F+PART G+PART H+PART I+PART J)				

GST Extra