

<b>BILL OF QUANTITY (BOQ) FOR ELECTRICAL WORKS AT FIRST FLOOR LCPC BUILDING</b>					
<b>RBO OFFICE SBI AT RAAM RAAM BANK CHAURAHA</b>					
<b>DISTRICT:- LUCKNOW (U.P.)</b>					
<b>SECTION-I- INTERNAL ELECTRICAL WORKS, WIRING FOR UPS AND AC</b>					
<b>S. No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate</b>	<b>Amount</b>
1.	<p>Supply, installation, testing and commissioning ( SITC) of new fully compartmentalised, wall/ Floor mounted, if floor mounted than stand should be made of MS channel/angle grouted to floor with the panel 450 mm above ground level, bottom/top cable entry, front operating, dead back main electrical panel made of 16g CRCA sheet steel painted with one coat of red oxide primer and two coat of outdoor type synthetic enamel paint (spray painted) after de greasing, de rusting and phosphading, with two earth studs, 30x6 mm G.I. Earth bus, SMC/DMC insulator as required and comprising of the following: <b>Incomer</b> : i. One 4P, 415 V, 250A, 35 KA breaking capacity MCCB with adjustable thermal and fixed magnetic release.</p> <p><b>ii.</b> One 4 pole, 415V, on load, 200 A, changeover switch with rotary handle, 0-500 A ammeter with set of CTs and 0-500V Voltmeter with selector switch and LED indicating lamp for each phase.</p> <p><b>Outgoing</b> : i One 415V, 4P, 125A, 25KA breaking capacity MCCB (AC). Connection to this MCCB is to be done after the main incomer MCCB and before changeover.(One for AC in common hall)</p> <p>ii.One no. 415V, 4P, 125A, 25KA breaking capacity MCCB with adjustable thermal and fixed magnetic release out going.(One for capacitor panel and One Spare)</p> <p>iii. Four nos. 415V, 4P, 100A, 25KA breaking capacity MCCB with adjustable thermal and fixed magnetic release out going.(One for UPS, AC on DG for RM, HR, Conference hall, One for power DB and One Spare)</p>	Set	1.00		
	<p>iv. Three no. 415V, 4P, 63A, 10 KA breaking capacity MCB(Two for light and one spare). v. Two no. 230V, DP, 40A, 10 KA breaking capacity MCB(One for glow sign board and one spare)Two Bus bar chamber with R,Y,B and N bus bars made of 25x10 mm Aluminium(Indal, Hindalco, Balco)(one for AC MCCB before Changeover and one for rest of the panel).</p>				
	Digital Ammeter with CT Set and selector switch, RYB LED LAMP, ON/OFF Indicating Lamp, 1 set 3 phase digital ammeter with CT, 1 set 3 phase digital voltmeter, 1 set phase digital frequency meter with CT, 1 set digital meter for KWH, KVAH, KW with CT or multi function meter having all above parameters				
	<p>Danger plate should be provided. All MCCB should be with external rotary handle, separator sheet and spreader terminals. Minimum phase to phase distance 32 mm, phase to neutral and earth 26 mm. Metallic partition should be provided between adjacent cubical/compartment. Cubical should be made of vermin and dust proof by means of suitable gasket around all door/covers removable gland plates to be provided. All bus bar should be sleeved by heat shrinkable PVC red, yellow, blue and black coloured. All wiring to be done by PVC insulated 1100V grade copper flexible conductor wire of following size. CT circuit : 2.5 sq. mm PT circuit : 1.5 sq. mm all wires to be provided with appropriate crimping type lugs/ferrules for termination. Protection shrouds to be provided on incoming side of incomer and on normally live parts when cubical door is opened. Bakelite barriers of 4 mm thickness shall be provided on incoming and outgoing side of incomer. Approval of general layout, manufacturing and single line diagram drawings from consultant/Bank's Engineer is required before commencing manufacture and the panel should be tested in the presence of Consultant/Bank's Engineer at manufacturer's premises before dispatch to site along with HV withstand and insulation resistance test reports.</p>				
2	Supply & installation on angle iron frame of 4 way TPN distribution board double door comprising incomer 63 A 4P ELCB 300 mA and with 11 Nos 6-32 A SPMCBs as outgoing. All MCB to be of C series with blanking plates for blank slots. Complete connection testing etc. in all respect (for Light Circuit + Power circuit in RBO and for one AC in RM chamber, Conference Hall and one DB to be provided for Power).	No	3.00		
3	Supply & installation on angle iron frame of 4 way TPN distribution board double door comprising with 63 A TPN MCB 10 KA incomer and 3 X 63 A SP MCB and 4 nos. 6-32 A outgoing, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates (One UPS DB to be provided in UPS Room).	No	1.00		
4	Supply & installation on angle iron frame of 4 way VTPN distribution board double door comprising with 125 A TPN MCCB 25 KA incomer and 8 X 32 A SP MCB and 4 nos. 25 A outgoing, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates (One AC DB to be provided near panel).	No	1.00		

5	Providing & installation on angle iron frame of 2+10 way SPN distribution board with cover/door(plastic or ms) comprising of one 40 Amp 100 mA in coming DP/ELCB and 10 6A- 25A out going SPMCB All MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect.(01 for branch UPS and 1 for light/power circuit. Outgoing MCB of rating 6A for light circuits, 10A for UPS circuits and 25A for power/raw power circuit)	Nos.	7		
6	Providing & installation on angle iron frame of 2+6 way SPN distribution board with cover/door(plastic or ms) comprising of one 40 Amp 100 mA in coming DP/ELCB and Six 6A- 25A out going SPMCB All MCB's to be of C series and 10KA breaking capacity. Complete Connection testing etc in all respect.(01 for branch UPS and 1 for light/power circuit. Outgoing MCB of rating 6A for light circuits, 10A for UPS circuits and 25A for power/raw power circuit)	Nos.	4		
7	Supply & installation on angle iron frame of 2 + 4 way SPN distribution board double door comprising with One 100mA 40 A DP ELCB/RCCB as incomer and 4 nos. 10-25 A outgoing, all MCB to be of C curve, 10 KA breaking capacity and board with blanking plates (One UPS DB to be provided in e-Lobby UPS Room).	No	4		
8	Providing & installation on angle iron frame of suitable MS MCB/ DB enclosure ie 2 way SPNDB (Consumer unit)(makes as per approved for Dbs) complete in all respect including earthing link etc comprising of C series MCBs. i) One 32/40 Amp ELCB 300MA for UPS output in UPS room, each circuits complete testing in all respect.	Set	3		
9	Providing & installation on angle iron frame of 2+10 way SPN distribution board with cover/door(plastic or ms) comprising of 06 nos. 40/32 Amp, 100 MA DP ELCB/RCBO 10 KA (makes as per approved for Dbs) to be connected before the AC stabilizer, complete testing fixing/ installation complete in all respect (AC).	Nos.	3		
10	S/F One 20/25 Amp, 100 MA DP ELCB/RCBO 10 KA, in a suitable MS box (makes as per approved for Dbs) to be connected before the AC stabilizer, complete testing fixing/ installation complete in all respect (AC).	Set	3.00		
11	Providing & Installation on angle iron frame of manufactures sheet steel 20/25A socket board with cover and 2 pole & earth metal plug and socket /Modular socket board and 25/32 Amp SPMCB complete in all respect for air conditioners.	Nos	13.00		
12	Providing & Installation on angle iron frame of manufactures sheet steel 40 A Modular type MCB changeover switch complete in all respect for UPS output.	Nos	2.00		
13	<b><u>DISTRIBUTION CABLE:</u></b>				
	<b><u>SUPPLY AND LAYING OF CABLE:</u></b>				
	Supplying and laying of 1.1 KV grade aluminium conductor, PVC/XLPE insulated and sheathed, armoured cables of following sizes conforming to IS:1554 (Part-I) underground or on surface with one 8 SWG G.I. earth continuity wire all along the run with MS painted saddle and clamps made of 6 mm thick MS flat.				
	(a) 3.5 core X 95 sq.mm. (Mains)	Mtr	215.00		
	(b) 3.5 core X 70 sq.mm. (AC/DG)	Mtr	70.00		
	(c) 3.5 core X 50 sq.mm. (UPS DB/Light/Power/DG)	Mtr	70.00		
	(d) 3.5 core X 35 sq.mm. (UPS DB/Light/Power/DG)	Mtr	75.00		
	(e) 3.5 core X 25 sq.mm. (UPS DB/Light/Power/DG)	Mtr	95.00		
14	<b><u>CABLE TERMINATION</u></b>				
	End termination of 1100 V grade, armoured Al cable of following sizes using Dowells make Cu lugs and double compression brass cable gland where required.				
	(a) 3.5 core X 95 sq.mm. (Mains)	Set	12.00		
	(b) 3.5 core X 70 sq.mm. (AC/Power/DG)	Set	8.00		
	(c) 3.5 core X 50 sq.mm. (UPS DB/Light/Power/DG)	Set	8.00		
	(d) 3.5 core X 35 sq.mm. (UPS DB/Light/Power/DG)	Set	8.00		
	(e) 3.5 core X 25 sq.mm. (UPS DB/Light/Power/DG)	Set	8.00		
15	HRC fuse unit (03) 320 A and 01 No. 320 AMP copper Neutral link near main Energy meter & near Generator set on suitable Sheet(porcelain kit-kat fuse unit) with connection etc.	Nos.	2.00		
16	Supply and fixing MS danger notice board.	Nos.	3.00		
17	Wiring for two indication lamps from UPS output DP/ DB critical/ non critical circuits in separate PVC conduits with lamp, holder in a suitable box with connections/ testing etc. complete in all respect in UPS room.	Nos.	2.00		
18	Supply, installation, testing and commissioning of power point for glow sign board with 3 X 2.5 sq.mm. Cu wire for phase, neutral and earth in PVC conduit including all accessories boxes as required with 25 Amp DPMCB with MS box etc. complete in all respect.	Nos.	1.00		

19	Supply, installation, testing and commissioning (SITC) of 2 X 6 + 1 X 6 sq.mm., 1100 V grade, FRLS, multi strand copper conductor PVC insulated wire in medium duty rigid or flexible PVC conduit as required preferably concealed in floor/ wall including chase cutting and making good of damages/ surface including connections, complete in all respect (For UPS and power circuit).	Mtr	240.00		
20	Supply, installation, testing and commissioning (SITC) of 2 X 4 + 1 X 4 sq.mm. 1100 V grade, FRLS, multi strand copper conductor PVC insulated wire in medium duty rigid or flexible PVC conduit as required preferably concealed in floor/wall including chase cutting and making good of damages or on surface including connections, complete in all respects (from SP MCB DB in UPS room to SPN DBs in hall for UPS powered sockets, AC SP MCB).	Mtr	410.00		
21	Supply, installation, testing and commissioning (SITC) of 2 X2.5 + 1 X 2.5 sq.mm. 1100 V grade, FRLS, multi strand copper conductor PVC insulated wire in medium duty rigid or flexible PVC conduit as required preferably concealed in floor/wall including chase cutting and making good of damages or on surface including connections, complete in all respects (from SP MCB DB in UPS room to SPN DBs in hall for UPS powered sockets, AC SP MCB).	Mtr	640.00		
22	Supply and fixing of 04 Nos 10 Amp Switch and 04 Nos. modular type Per point 16/6 Amp socket 5pin on suitable modular plate and manufacturers steel box including circuit wiring from SPNDB to computer socket board With FRLS 2.5sqmm PVC copper wire with 1100v grade flexible / stranded wires for Phase neutral and earth in PVC conduit on surface and floor concealed up to computer socket boards complete with MS saddle, fixing,connection, testing / commissioning in all respect for system/prn room on counters, tables, wall, as required by the Office.(One power board with 3 socket /switches & required wiring will be treated one point) Colour coding /ferule marking may be taken care. NOTE (i) One circuit to be connected with maximum 03 power Board. To avoid use of more number of PVC pipe 32/ 25/ 20 mm PVC pipe may be used ie as per IS For different SPNDBs separate circuit and PVC conduit to be used.( Circuit wiring to be taken upto 8 metre. Beyond 8 metre additional wiring shall be paid.) ( Socket to be given below table and switch above table)	Points	28.00		
22A	Same as above but looped from the above 1 <sup>st</sup> Point to 2 <sup>nd</sup> point.	Points	26.00		
23	Supply, installation, testing and commissioning of power point having one No. 16 A modular switch and 16 Amp modular socket, modular board with FRLS 4 sq.mm. Cu wire for phase and neutral and 2.5 sq.mm. Cu wire for earth in PVC conduit including all accessories, boxes as required, maximum Point on one circuit should not exceed Two. Circuit to be connected from PDB, controlled by each point with each switch testing/ commissioning in all respect. Cu wire of PVC 1100 V grade insulated for phase, neutral and earth, concealed properly. Wiring to commence from DB to switch board and then to the point including connection testing etc. all complete in PVC conduit (concealed on wall/ floor and making good the same). Item to include supply & installation of modular board, 15/20 Amp switches, sockets etc. complete for power board.( Circuit wiring to be taken upto 8 metre. Beyond 8 metre additional wiring shall be paid.)				
23A	Primary Point	Points	14.00		
23B	Secondary Point C Looped Point	Points	8.00		
24	Supply, installation, testing and Commissioning of power point having one nos. 6/10 A and one 16A modular switch and one no. 6/10 Amp and 16A modular socket, modular metal board with FRLS 2.5 sqmm cu wire for phase and neutral and 2.5sqmm cu wire for earth in medium duty <b>PVC conduit</b> including all accessories box as required, Maximum Point on one circuit should not exceed Two. For air purifier, TV, for office area, UPS room, guard room & entrance room at suitable place. (Record & stationary room to be connected through a lead or 3x1.5sqmm pvc copper wire in a thick PVC pipe to out side with 15Amp socket this will be paid extra) or as required by Office at suitable place) Circuit to be connected from lighting TPNDDB, controlled by each point with each switch testing/ commissioning in all respect. Cu wire of PVC 1100V grade insulated for phase, neutral and earth, concealed properly. Wiring to commence from lighting TPNDDB/Fuse unit to switch board and then to the point connection testing etc in all respect as per Office requirement. In PVC conduit (concealed on wall/floor and making good the same). Item include supply & Installation of modular MS board, 6/10Amp switches, Sockets etc. complete for power board.( Circuit wiring to be taken upto 8 metre. Beyond 8 metre additional wiring shall be paid.)				
24A	Primary Point	No.	30.00		
24B	Secondary Point C Looped Point	No.	26.00		
25	Supply and burying of safe Earthing Electrode T-19 (hot dip Galvanised), Length 3000 mm, outer pipe 50 mm, inner pipe 25, Terminal Dia 12 mm, outer GI pipe of 16 SWG and inner GI pipe of 12 SWG with Hot dip Galvanization up to 100 micron filled with crystalline conductive mixture (CCM) having Anti-corrosive & conductive property with 50 Kgs activated soil (BFC) capable of reducing the soil resistivity with good mixture of retaining capacity along with CI Box with hinged cover and masonry housing (from electrode terminal to SW board, cost of GI strip will be extra). GI strip directly to be connected from GI pipe with double nut bolt and spring washer. Make: As approved in UPPWD & CPRI certified. (one for 2 + 8 way TPN DB in system room, one for panel safety and 02 for UPS body/ isolation transformer, one earthing to be used for genset neutral).	Set	3.00		

25A	SITC of 25 X 3 mm GI Strip concealed on wall/ floor up to 1 <sup>st</sup> per meter point complete in all respect.	Mtr	30.00		
25B	Providing & installation of 1 X 10 sq.mm. PVC insulated copper wire in 20 mm PVC pipe from earth station to UPS room complete in all respect including fixing with nut and bolts (concealed on wall/ floor).	Mtr	150.00		
26	Fixing of 225 MM sweep exhaust and making of hole on wall of proper size with nut, bolts/ brackets complete installation testing/ commissioning & connection with item No. cement work etc. complete in all respect in UPS, strong room, locker room & toilets etc.	Nos.	2.00		
27	Distribution wiring including circuit wiring from TP/NDB/ SP/NDBs to switch boards with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 2.5 sq.mm. for P, N & E in <b>ISI marked PVC conduit</b> and point wiring from switch board to point outlet with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. for P, N & E in ISI marked PVC conduit with same make accessories in concealed/ surface or in double lock PVC casing/ capping and with modular type switches in metallic modular box, front plate, cover plate, 3 plate ceiling rose, angular holder, with two internal earthing terminals/ studs for earthing. Junction boxes to be covered with ISI mark 3 mm thick phenolic laminated sheet cover, brass screws and cup washers for cover fixing PVC conduit and other accessories.				
	(i) All switch boards and regulators to be modular type, MS box should be 16 swg with 3 mm thick ISI marked phenolic laminated cover, brass screws and cup washers and Modular type 6/10 A switch/socket. (ii) Point wiring should be inclusive of continuous wire length (P, N & E) upto connection block of light fitting/fans. However, if there are more one light/fan point on one switch board than Neutral and Earth can be looped from one point to another point upto the 8 points/fittings with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. Beyond eight point new wire from the switch board is to be provided (iii) Provision for fan regulators shall be electronic step type 400 W rating. (iv) Ceiling fan point shall be provided with regulators wherever specified. The switch boards to be considered accordingly. ( Circuit wiring to be taken upto 8 metre. Beyond 8 metre additional wiring shall be paid.)				
i	One Light point controlled by one switch	Nos.	60.00		
ii.	Two Light point controlled by one switch	Nos.	20.00		
iii	Three Light point controlled by one switch	Nos.	30.00		
iv	Call bell point (With supply and fixing call bell)	Nos.	2.00		
v	Ceiling fan point(Including regulator for ceiling fan)	Nos.	4.00		
vi.	3 pin 6 A socket outlet point including socket and controlling switch (On switch board/ Workstation- looped from raw power provided on counter).	Nos.	16.00		
vii	3 pin 6 A socket outlet point including socket and controlling switch (socket away from switch board for wall fan).	Nos.	20.00		
28	Distribution wiring including circuit wiring from TP/NDB/SP/NDBs to switch boards with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 2.5 sq.mm. for P, N & E in <b>ISI marked MS conduit</b> and point wiring from switch board to point outlet with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. for P, N & E in ISI marked PVC conduit with same make accessories in concealed/ surface or in double lock PVC casing/ capping and with modular type switches in metallic modular box, front plate, cover plate, 3 plate ceiling rose, angular holder, with two internal earthing terminals/ studs for earthing. Junction boxes to be covered with ISI mark 3 mm thick phenolic laminated sheet cover, brass screws and cup washers for cover fixing PVC conduit and other accessories. <b>(Strong Room)</b>				
	(i) All switch boards and regulators to be modular type, MS box should be 16 swg with 3 mm thick ISI marked phenolic laminated cover, brass screws and cup washers and Modular type 6/10 A switch/socket. (ii) Point wiring should be inclusive of continuous wire length (P, N & E) upto connection block of light fitting/fans. However, if there are more one light/fan point on one switch board than Neutral and Earth can be looped from one point to another point upto the 8 points/fittings with 1100 V grade, PVC insulated, FRLS, multi strand Cu wire of size 1.5 sq.mm. Beyond eight point new wire from the switch board is to be provided (iii) Provision for fan regulators shall be electronic step type 400 W rating. (iv) Ceiling fan point shall be provided with regulators wherever specified. The switch boards to be considered accordingly.				
i.	One Light point controlled by one switch	Nos.	10.00		
ii.	Two Light point controlled by one switch	Nos.	10.00		
iii	Ceiling fan point(Including regulator for ceiling fan)	Nos.	10.00		
iv	3 pin 6 A socket outlet point including socket and controlling switch (On switch board/ Workstation- looped from raw power provided on counter).	Nos.	4.00		
v	5 pin 16 A socket outlet point including socket and controlling switch Power point	Nos.	6.00		

29	Wiring from TPNDDB to isolation transformer/ Stabilizer and to UPS I/P (and earthing as provided) with 03 PVC copper wires of size point 10 sq.mm. for Phase & neutral in 20 mm PVC conduit, wire to be of 1100 V grade insulated with copper conductor. complete with ms saddle/ fixing/ connection testing commissioning etc. (separate medium circuit).	Mtr	32.00		
30	<b>Installation of following items:</b>				
a	Light fittings in Ceiling/ Surface/ LED Strip	Nos.	132		
b	Wall fan/ceiling fan	Nos.	24		
31	Strong room, record room and locker room to be connected through a lead or 3X2.5sq mm PVC copper wire in a thick PVC FLEXI pipe to out side with 15Amp socket (in side to be connected directly with proper connection – out side with power point.	No.	2.00		
32	Dismantling of old unused item like cable, wire DBs, TPNDDBs, all old fan, lights etc. and keeping in the branch live in all respect/proper cable dressing of existing cable if it is retained. Vendor has to keep minimize 02 electrician for the branch till work is completed.	Job	1		
33	Preparation of Single line Diagram(SLD)/ as build drawing as per actual work done	No.	1.00		
<b>SUB TOTAL SECTION-I: INTERNAL ELECTRICAL WORKS</b>					
<b>SECTION-II: SUPPLY ITEMS (LIGHT FITTINGS Make: Wipro/ Phillips/ Havells/ Crompton/ Bajaj)</b>					
1	Supply of 600 mm X 600 mm in false ceiling, full panel, 30-36 W LED light fixture suitable for recess mounting complete in all respects with LEDs, driver, diffuser, housing complete in all respects. Acceptable Makes: Philips/ Crompton/ Bajaj/ Wipro/ Havells/ Syska.	Nos.	83.00		
2	Supply of 600 mm X 600 mm surface mounted with suitable frame, full panel, 30-36 W LED light fixture suitable for recess mounting complete in all respects with LEDs, driver, diffuser, housing complete in all respects. (Currency chest, Locker, Strong room, FRC and record room) Acceptable Makes: Philips/ Crompton/ Bajaj/ Wipro/ Havells/ Syska.	Nos.	25.00		
3	Supply of LED in false ceiling, round/ square, recess mounting Warm White/ NW, 12-15 W downlighter complete with LED, driver etc. Acceptable Makes: Philips/ Crompton/ Bajaj/ Wipro/ Havells/ Syska.	Nos.	98.00		
4	LED flexi strip light of 5 mtrs. Length in 15 - 25 W with driver of make Philips/ Crompton/ Bajaj/ Wipro/ Havells/ Syska.	Nos.	48.00		
5	Supply of LED on wall/ ceiling, 1200 mm, 1 X 18/20 W batten type light fitting complete with LED tubular lamp with driver, complete in all respects. Acceptable Makes: Philips/ Crompton/ Bajaj/ Wipro/ Havells	Nos.	15.00		
6	Supply of 450 mm sweep, oscillating type, wall mounting multi speed BLDC <b>Metal Body Metal Blades Three pin</b> wall fan with motor, wire guard, control, complete in all respects. Acceptable Makes: Crompton/ Bajaj/Havells/ Usha/ Khaitan/Almonard/Orient.	Nos.	20.00		
7	Supply of Heavy duty industrial type 300 mm exhaust fan 1400 RPM (for UPS room/toilet) Acceptable Makes: Crompton/Bajaj/ Havells/Usha/Khaitan	Nos	3		
8	Supply of LED on wall/ceiling, 600mm, 10 W batten type light fitting complete with LED tubular lamp with driver, complete in all respects. Acceptable Makes: Philips/Crompton/ Bajaj/ Wipro/ Havells.	Nos	5		
9	Supply of 1200 mm BLDC ceiling fan metal body, metal blades etc.) Acceptable Makes: Crompton/Bajaj/ Havells/Usha/Khaitan	Nos	15		
<b>SUB TOTAL SECTION-II: SUPPLY ITEMS</b>					
<b>1 SUB TOTAL SECTION-I: INTERNAL ELECTRICAL WORKS</b>					
<b>2 SUB TOTAL SECTION-II: SUPPLY ITEMS</b>					
<b>Grand Total</b>					
					<b>Plus GST</b>
<b>Rate are considered inclusive of all except GST. GST shall be admissible at prevalent rates/ rules.</b>					