ELECTRICAL ESTIMATE WORKS FOR CANARA BANK BALLABGARH BRANCH BALLABGARH,HARYANA.					
S.No.	**DESCRIPTIONS OF WORK**	**UNIT**	**QTY**	**RATE**	**AMOUNT**
				(RS)	**(RS)**
	ELECTRICAL WORKS				
	GENERAL NOTES				
1	All equipment and material shall be IS approved.				
2	All approvals shall be obtained from Client / Consultant				
3	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.				
4	All vendor drawings shall be approved by the Client /Consultant before fabrication work starts.				
5	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.	**CIRCUIT CUM POINT WIRING**				
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	Flexible conduits, where ever required, shall be of heavy duty/G.I and complete with couplers.				
6	Approved GI saddles and grouting the same for exposed conduit work.				
7	All circuit & point wiring shall be colour coded & shall have ferruling on either end for circuit identification.				
8	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.				
9	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.				
10	Switch, socket outlet and necessary blank plates wherever required.				
11	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.				
12	All wires shall be PVC insulated FRLS copper conductor stranded flexible 1100 volts grade and shall be of approved make.				
13	All sockets shall be shuttered type and with earth terminal.				
14	Suitable rating of plugs top shall be provided for all splash proof industrial socket outlets.				
15	Separate neutral and earthing wire shall be provided for each circuit.				
16	Lighting and power circuit to be kept separate.				
17	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.				

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
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 & 1.5 sq.mm. copper earth wire in concealed/ surface using 16 SWG MS conduits, accessories such as bends, tees, saddles, draw boxes, mounting boxes, inner plates, cover plates, ceiling rose etc (whereever 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 1100 V grade multi- stranded copper conductor wire & 2.5 sq.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 flling 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	One light points controlled by one 6 amp. Modular switch.	Nos.	22.00		
ii	Two light points controlled by one 6 amp. Modular switch.	Nos.	14.00		
iii	Three light points controlled by one 6 amp. Modular switch.	Nos.	5.00		
iv	Four light points controlled by one 6 amp. Modular switch For cove light.	Nos.	5.00		
v	One call bell point with ceiling rose/ 6amp. 3 pin socket controlled by one 6 amp. Push Modular switch. With call bell	Nos.	1.00		
vi	One wall fan/ ceiling/ exhaust fan point with 6 amp 3-pin socket controlled by one 6 amp. Modular switch. The switch should be at switchboard level.	Nos.	14.00		
vi	Same as serial no 1 but using 2*2.5 + 1*2.5 Sqmm 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 Sqmm copper conductor wires FRLS insulated 1100V grade (max 4 points per circuit).				
a	Primary Point	Nos.	4.00		
b	Secondary Point looped	Nos.	8.00		
2	**POWER POINTS**				
	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 earth wire from D.B. to first point 1^{st} socket and 1^{st} to 2^{nd}, socket with 2*2.5 sq.mm. and 1*2.5 earth wire including providing and fixing of 16 Amp, 6 –pin socket with 16 Amp. Switch. (Modular type switch/ socket/ plate etc. complete assembly) max 2 points per circuit.				
a)	Primary Point	Nos.	6.00		
b)	Secondary Point	Nos.	6.00		
3(a)	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 with modular type AC box(tiny trip type) with socket complete in all respects controlled by 25/32 A SP MCB to be provided near indoor unit. The point starts from DB to stabilizer to the point near the indoor unit including top.	Nos.	4.00		
3(b)	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*6.0 sq.mm. PVC insulated 1100 V grade copper conductor wire of weather proof type 2 way SPN DB complete in all respects controlled by with 40 Amp (10 KA) MCB to be provided near outdoor unit. The point starts from DB to the point near the outdoor unit.	Nos.	0.00		

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
3(b)	Same as serial no.1, but wiring for A/C socket by using 4*6 sq.mm. PVC insulated 1100 V grade copper conductor wire and earthing with 1*6.0 sq.mm. PVC insulated 1100 V grade copper conductor wire of weather proof type 4 way SPN DB complete in all respects controlled by with 40 Amp (10 KA) MCB to be provided near outdoor unit. The point starts from DB to the point near the outdoor unit.	Nos.	2.00		
4	**COMPUTER POINTS**				
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 3 nos. 6 amps. 5 pin modular type sockets, one 6 amps modular swtich 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) c) Same as above but provide for television. (Maximum 3 points in a circuit)				
	Primary Points	Nos.	6.00		
	Secondary Points	Nos.	8.00		
b	Wiring with 2x2.5 sq.mm + 1x2.5 sq.mm PVC insulated 1100 V grade multi stranded copper conductor wires in 2mmthick PVC conduit from UPS DB to computer point. Each point to have 2 nos. 16 amps 5 pin modular type sockets, 2 No's 16 amps modular swtich 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 and sockets under the counter. or as directed by the engineer incharge for the rack supply in server room, PA rack, CCTV, b) Same as above but looped from the above 1st point to 2nd point (Maximum 2 points in a circuit)				
	Primary Points	Nos.	1.00		
	Secondary Points	Nos.	1.00		
B.	**CONDUITING FOR TELEPHONE, COMPUTER & CONDUITING, WIRING FOR T.V. SYSTEM.**				
1.0	**TELEPHONE SYSTEM**				
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 45 outlet, faceplate and mounting box complete of modular type. This work includes supply and laying of CAT-6 cable in PVC conduits throughout the lenght, from the I/O hub to the point.	Nos.	10.00		
1.2	Supplying, laying, effecting terminations, testing and commissioning of 0.51 mm dia Cu. Conductor, twisted, colour coded with polythene capor 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 10 pair krone tag block with enclosure.	Nos.	1.00		
2	**COMPUTER NETWORKING**				

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
2.1	Wiring for computer networking from Jack Panel in data rack to computer workstation 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, RJ 45 outlet, faceplate and mounting box complete of modular type, This work includes supply and laying of CAT-6 cable in PVC conduits throughout the lenght, from the I/O hub to the point.	Nos.	20.00		
2.2	Supplying and fixing 9 U (Rack with glass door, opening in the front power panel 1 (horizontal), cable manager 1 lock & key).	Nos.	1.00		
2.3 a	Supply, Installation, Testing & Commissioning of 24 port Jack Panel.	Nos.	1.00		
2.3 b	Supply, Installation, Testing & Commissioning of 16 port Jack Panel.	Nos.	0.00		
2.4	Supplying and fixing Patch Cord-2 Meter- (DBPS Mounting Cord)	Nos.	20.00		
2.5	Supplying and fixing Patch Cord-1 Meter-	Nos.	20.00		
3.0	Supply and fixing of 1.6 mm thick G.I. Box along with RG 6 T.V Co axial socket with Cover Plate.	Nos.	1.00		
4.0	Supply, drawing, connecting, testing and commissioning of T.V Coaxial cable RG 6 in existing conduit.	RM	80.00		
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 replastering the floor level to original. Conduit must be 30 mm below the floor finish level.				
i	1 X 8 SWG Cu wire for earthing in PVC Conduit.	RM	45.00		
ii	2 X 6 sq.mm. + 1 X 6 sq.mm.	RM	0.00		

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
vi	Supplying, laying, testing & commissioning of 4 C X 10 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth G.I wire including cables end termination using appropriate Lugs, Glands, termination acessories, Clamps etc. as required as per specification **(LIGHT DB).**	RM	20.00		
v	Supplying, laying, testing & commissioning of 4 C X 16 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth G.I wire ncluding cables end termination using appropriate Lugs, Glands, termination acessories, Clamps etc. as required as per specification **(POWER DB,& UPS).**	RM	35.00		
vi	Supplying, laying, testing & commissioning of 4 C X 25 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth G.I wire ncluding cables end termination using appropriate Lugs, Glands, termination acessories, Clamps etc. as required as per specification **(VTPN).**	RM	10.00		
v	Supplying, laying, testing & commissioning of 4 C X 35 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth G.I wire ncluding cables end termination using appropriate Lugs, Glands, termination acessories, Clamps etc. as required as per specification **(DG & MAIN).**	RM	25.00		
D.	**DISTRIBUTION BOARD**				
	Supplying, installing, testing & commissiong 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 boxl, 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.				
	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'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 125 A.				
	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.				

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
a	**4-way TPN DB (LIGHT DB)**	No.	1.00		
	Incomer:-				
	1 No. 32 Amp TPN (10 KA) MCB with 32 A 4P RCCB (100 MA) .				
	Outgoing:-				
	12 Nos.10/20 Amp (10 KA) SP MCB				
b	**4-way TPN DB (POWER DB)**	No.	1.00		
	Incomer:-				
	1 No. 40 Amp TPN (10 KA) MCB with 40 A 4P RCCB (100 MA)				
	Outgoing:-				
	12 Nos.10/20/25 Amp (10 KA) SP MCB				
c	**10-way SPN DB (For UPS Sub DB)**	No.	1.00		
	Incomer:-				
	1 No. 25 A DP RCCB (100 MA)				
	Outgoing:-				
	8 Nos.10Amp (10 KA) SP MCB				
d	**4 -way V-TPN DB (AC)**	No.	1.00		
	Incomer:-				
	1 No. 63 Amp 4 Pole (16 KA) MCCB				
	Outgoing:-				
	3 No. 40 Amp (16 KA) TP MCB				
	3 Nos.10/16/25/32 Amp (10 KA) SP MCB				
E	**(LIGHT FITTINGS & 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 Fixures should be covered with minimum 3 Years onsite replacement warranty).Philips,Wipro,Tisya				
i	FULL GLOW 2 X 2 LED 36 W slim Smart Panel of make As specified in tender document or approved by SBI/Architect. **Commercial pattern**	Nos.	22.00		
ii	Supplying, fixing, testing and commissioning of 15 W LED commercial type down lighter of make As specified in tender document or approved by SBI/Architect.**Commercial pattern**	Nos.	22.00		
iii	Supplying, fixing, testing and commissioning of 9 W LED commercial type down lighter of make As specified in tender document or approved by SBI/Architect.**(for toilet and passage)Commercial pattern**	Nos.	10.00		
iv	supplying , fixing ,testing and commissioning of 5 W LED commercial type spot light of make As specified in tender document or approved by bank .**Commercial pattern**	Nos.	3.00		
v	LED 18 watt Tube Light with all accessories.make As specified in tender document or approved by bank .**Commercial pattern**	Nos.	11.00		

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
vi	LED cove light necessary installation fittings. make as specified in tender document or approved by SBI/Architect.**Commercial pattern**				
a)	4' feet cove light	Nos.	14.00		
a)	3' feet cove light	Nos.	8.00		
a)	2' feet cove light	Nos.	8.00		
a	Wall mounted fans 400/450 mm dia. make As specified in tender document or approved by SBIIMS/Architect. **AS PER BANK INSTRUCTION(Required approval for bank Engineer)**	Nos.	10.00		
b	Supply & fixing of 230 mm exhaust fan with louvers and plastic body with all accessories etc. complete of make As specified in tender document or approved by SBI/Architect.	Nos.	3.00		
F.	**EARTHING SYSTEM**				
1	Supply, Installation, Testing and Commissioning of Waterless Maintenance Free Earthing Based on Pre-Casted Conductive Earthing Electrode **Work should be executed through either Bank approved agency or M/S Information technology (ITPC) Contact:9811067053/9717983433** i) Dimensions Length x Dia (MM) : 2000 x 100 with 16mm Solid Conductor (Cu) ii) Conduction: Non Ionic Movement of Ions iii) Multi Point Dissipation Contacts iv) Exceeds Grade 25 Concrete v) Environment: Ph Neutral Internal Material vi) Relative Density: 890-990 kg/m3 vii) 3000 times more effective than Bentonite viii) Electrolytic Corrosion Resistance: >86% reduction in corrosion ix) Short Circuit Current (Tested): Peak: 40 KA RMS: 22 Kilo Amps for 1 Sec x) Mechanical Strength: >Grade 25 Concrete xi) High Fault Current Test Withstand: 1686 V for 500 ms xii) Standards: IEEE 80:2000 & BS 7430 xiii) Warranty: 10 Years Full Replacement xiv)Life of Earthing: 25 Years respectively xivi) Make: KRATONITE / ARC-IMPULSE/APS		4.00		
2	Providing and fixing of Copper strips in surface or in recess for loop earthing etc. as required.				
i	Copper Strip (PVC insulated heat shrinkable sleeves) of size 25 x 3mm as in earth continuity conductor fixed to wall or buried in ground or any other situation for loop earthing as required at site (Quantity depend on Site Requirement)	RM	30.00		
iii	Providing and fixing 2 X 8 SWG dia. Cu earth wire in PVC conduit on surface or in recess for earthing along with the existing surface/ recess cable as required. From pit to the panel & UPS	RM	30.00		
ii	25 mm x 5 mm GI strip	RM	5.00		
iii	Providing and fixing 2 X 8 SWG dia. Cu earth wire in PVC conduit on surface or in recess for loop earthing along with the existing surface/ recess cable as required.	RM	35.00		

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
G.	**MAIN PANEL AND METER BOARD**				
	Designing, fabrication, supply, installation, testing and commissionings of front operated cubicle type compartmentalised, front access, free standing on 75MM "[" 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, gaskettted (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 fnish 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 (KRYPTON POWER CONTROLS/R-FLEX/TRICOLITE/Supertech Power control Type of Approval as instructed by the SBI/Architect)as per the following specifications.				
	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be withheat 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				
	GA drawings shall be got approved by SBI				
a.	**Floor panel shall consists of : -**				
	INCOMER FROM MAIN LINE				
	1 No. 100 Amps,TPN MCCB (25 KA) with extendeble rotary handle each thermal over current, instantaneous, Short circuit realease,Earth fault.				
	BUSBARS				
	125 amps TPN pole busbar chamber of suitable length with copper busbars. All busbars and interconnections shall be of suitable size copper strips.				
	INDICATING PANEL				
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF etc. with 3 Nos. current transformers of 100/5A ratio, 10 VA Class-1.0 metering. - 1 sets				
	LED indicating lamps For each Phase with backup protection.				
	OUTGOINGS:-				
	2 Nos 40A TPN MCCB (16 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. For capacitor Bank AND AC VTPN,				

S.No.	DESCRIPTIONS OF WORK	UNIT	QTY	RATE	AMOUNT
	INCOMER FROM MAIN PANEL BUS BAR				
	1no. 63 Amp 4P On Load Change over switch with 1 No. 63 Amps,TPN MCCB (25 KA) with extendeble rotary handle each thermal over current, instantaneous, Short circuit realease,Earth fault.				
	BUSBARS				
	125 amps TPN pole busbar chamber of suitable length with copper busbars. All busbars and interconnections shall be of suitable size copper strips.				
	INDICATING PANEL				
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF etc. with 3 Nos. current transformers of 63/5A ratio, 10 VA Class-1.0 metering. - 1 sets				
	LED indicating lamps For each Phase with backup protection.				
E					
	OUTGOINGS:-				
	3 Nos 63A TPN MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. (For PDB,UPS, & SPARE)				
	2 Nos 40A TPN MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. (For LDB)				
	2 Nos 40A DP MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. (For SIGNAGE & ATM)				
	The **electrical panel** as described above and specifications complete.	Set	1.00		
c	Supplying, installation, testing & commissioning of 10 KVAR, APFC Panel autooperation and power factor should be nearing unity complete as required inluding all contactors, relays, indivating units etc. as required at site". Capacitor make: ABB/ Siemens/ Neptune	Set	1.00		
	6 nos. of capacitor duty contactors				
	1 Nos. 5 KVAR MPP type heavy duty capacitor banks along with 1 Nos. 16A TP MCB of 10 KA service breaking capacity with heavy duty solid detachable neutral link				
	2 Nos. 2 KVAR MPP type heavy duty capacitor banks along with 2 Nos. 10A TP MCB of 10 KA service breaking capacity with heavy duty solid detachable neutral link				
	1 Nos. 1 KVAR MPP type heavy duty capacitor banks along with 1 Nos. 10A TP MCB of 10 KA service breaking capacity with heavy duty solid detachable neutral link				
	TOTAL FOR ELECTRICAL WORKS				