CANARA BANK CIRCLE OFFICE KARNAL					
BOQ (BILL OF QUANTITY) OF ELECTRICAL WORK FOR CANARA BANK BRANCH AT UTTAWAR, HARYANA.					
	PREAMBLE TO BOQ				
1.0	The work shall be executed as per relevant specification and drawings.				
2.0	All material and equipment shall be as per specification and as per approved makes of material. Where specifications are not available the material shall be as per Indian standard specifications. The quantities and capacities of the equipments shall meet the requirement for successful completion of the work.				
3.0	The installation and testing shall also be as per specifications and as per direction and satisfaction of Engineer in charge.				
4.0	Contractor shall submit the shop drawings for approval by consultants / Engineer in charge. The work shall be carried out as per the approved shop drawings.				
5.0	Panels shall be fabricated as per specifications after approval of fabrication drawings by consultant / Engineer incharge.				
6.0	All Electrical panel must have provision of potential free contacts for BMS/FAS.				
7.0	All Electrical panel must have digital type energy meter with RS 485 port.				
8.0	The rates of all the items of the BOQ shall include the cost of :-				
i)	All materials, fixing hardware, accessories, tools and plants, freight, insurance, labour, taxes, duties, testing commissioning and of the work, as per specifications and drawings.				
ii)	Wastage on material and labour.				
iii)	Loading, unloading, handling charges, hoisting the material to all upper levels.				
iv)	Execute the work as per specifications and drawings to the full satisfaction of engineer incharge.				
v)	All liabilities, obligations and risks arising out of conditions of contract.				
vi)	All requirements for successful completion of the work whether mentioned in BOQ, specifications land drawings or not.				
vii)	In the event of conflict between BOQ, specifications and drawings, the most stringent shall apply. The decision of Architect / Engineer incharge / Consultant shall be final and binding.				
9.0	The quantities of the items in the BOQ are for general guidance only based on the consultants drawings and documents. The contractor shall be paid for actual quantities as per schedule rates.				
10.0	Contractor shall visit the site before quoting the rates and satisfying himself about the working conditions. Since this is a tall building, hoisting the material to upper levels may be taken into account white quoting the rates. No extra claim on this account shall be entertained.				

11.0	Approval of all makes of material to be supplied out of approved list, shall be obtained by the contractor. Sample of the material shall be kept at site to check with the material actually installed at site.				
12.0	Engineer in charge may get the material tested at authorized labs. In case material is found under specifications as per IS, same shall be replaced by the contractor. The test fee for 1st test shall be borne by the client but for subsequent test, fee due to failure of first sample, would be borne by the contractor.				
13.0	Testing and commissioning shall be carried out as per IS 732-1989 for the installation. The record of test results shall be maintained and submitted to the engineer in charge who would check the same at random.				
14.0	The tender shall be filled in ink and any cutting / overwriting shall be attested by the tenderer. Rates shall be quoted both in figures and words. If there is discrepancy between the rates in figures and words, then rates in words shall be final.				
15.0	Totaling errors or missing amounts shall be corrected and incorporated in tendered amount.				
16.0	Continuous earth wire shall run alongwith circuit wiring and point wiring. All switch boxes and fixtures shall be earthed. Only solid conductor earth wire shall be used for earthing.				
17.0	Where only conduits are laid for other services 16 SWG steel wire shall run in the conduit for pulling the wires at later date, by other agencies.				
18.0	Tenderer may note that there are lot of RCC walls in which conduits and outlet boxes switch boxes are to be provided. Costing of such walls shall be done with mixer shutterings. Conduits and boxes shall be laid before pouring the concrete. The outlet boxes, J.boxes, switch boxes shall be touch welded to the reinforcement before concreting. Only deep metallic J.boxes shall be used with PVC conduit as well.				
19.0	All connections shall be through, aluminium ferrules for aluminum conductors and copper ferrules for copper conductor cables.				
20.0	Earth wire with point wiring, circuit wiring, shall be of green colour with solid conductor.				
21.0	DBs shall be circuit numbered.				
22.0	As built drawing shall be prepared by the contractor after successful completion of the work these drawings shall incorporate the actual layouts, routes of cables and conduits with sizes, locations of outlets, DBS switch rooms panel, Tag blocks EPABX, Switches servers, fire detectors, zonal and main fire panels, location of CCTV cameras, monitors, etc. sets of blue prints of switch drawings shall be submitted to the Engineer incharge for verification with actual layout at site and for record.				

S. No.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (Rs.)	AMOUNT(RS.)
A)	**MV PANEL BOARDS**				
	Design, fabrication, loading, unloading at store, installaton, testing & commissioning as directed by Engineer-in-Charge, of LT Panels fabricated out of 2mm thick for structural members (Load bearing members) and 1.6mm thick for door and covers (Non load bearing members) CRCA sheet in cubicle compartmentalize free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel 'T' irons and / or flats wherever necessary, 16 gauge CRCA sheet steel shall be used for final distribution panels. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of zinc chromate primer and final approved shade of enamelled paint. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3-phase, 4-wire, 50Hz supply system and with 15% spare space, lifting hooks shall also be provided in case of large panels. Panel must be BMS/FAS Compatible.				
	Approval shall be taken for each panel before fabrication. Galvanized hardwares with zinc passivation shall be used in fabrication of panels.				
	General Notes:				
1.0	**MCCB:**				
	MCCBs shall be used with Thermal Magnetic Based releases upto 250A and microprocessor based Over Load, Short Circuit / Earth Fault release.				
2.0	Breaking capacity mentioned is Ics value.				
3.0	This BOQ to be read in conjunction with technical specifications and Single Line Diagram (attached for reference). If any discrepancy occurs that should be brought to the notice of Client/Consultant before quoting the price otherwise stringent condition will be deemed to have been considered.				
4.0	All MCCBs shall be provided with rotary operating handle and ON/OFF lamps.				
5.0	All meters shall be digital type (unless otherwise specified) with RS 485 Port.				
6.0	All Incoming and outgoing breaker must have provision of Potential free contacts for BMS/FAS.				
7.0	All MCBs shall be motor duty type.				
8.0	All current/voltage transformer shall be cast resin type.				
9.0	All indicating lamps shall be LED type.				
10.0	Current density for Al. bus bars shall not be more than 0.8A/Sqmm. Rating of Bus bar is after considering all derating factors. (Bus bar sizing calculation to be submitted for approval.)				
11.0	All internal control wiring shall be heat resistant type.				
12.0	All TP feeders shall be provided with Isolable neutral link.				
13.0	Bus bar chamber & cable entry both shall be provided at top only.				

14.0	All feeders shall be provided with door interlocked with door defeat, pad lock facility.				
15.0	Live parts shall not be accessible after opening the door, Transparent acrylic sheet to be provided to cover the same.				
16.0	Spare contacts of MCCBs / Relay / Contactor shall be wired upto terminal block.				
17.0	20% spare control terminal to be provided.				
18.0	All incoming/outgoing cables shall be terminated on links/terminals.				
1.0	**MV PANEL**				
I.	INCOMING				
a)	1 No-125 Amp,25KA,4P MCCB				
II.	**METERING & INDICATION SEB**				
a)	CT for metering 120/5A Class-1, 15VA - 3 Nos.				
b)	Multifunction Meter-1 no.				
c)	Red, Yellow & Blue indicating lights with control MCB of 2A - 1 Set				
III	**OUTGOING**				
a)	63 A TPN MCB (10KA) - 2 No.				
b)	40A TPN MCB (10KA) -`1 Nos.				
c)	25A DP MCB (10KA) -1 Nos	Nos	1.00		
d)	4 Pole ELCB/RCCB 100 M Amp , 1 Nos of Siemems/ L&T/Sneider Including all accessories neutral links etc all complete including dressing				
e)	Manual changeover 125 Amp				
	TOTAL CARRIED OVER TO SUMMARY			**(A)**	
B)	**MV CABLES**				
1	Supplying, Laying, testing & commissioning of the following sizes of XLPE Al. Conductor armoured cables of 1.1KV grade on the surface of wall or on existing cable trays complete with hangers, properclamps fixing hardware etc. as required				
a)	4 C x 50 Sq. mm Al. Cable	R/mt	25.00		
b)	4 C x 25 Sq. mm Al. Cable	R/mt	20.00		
c)	4 x 10 sqmm Copper Wire with 50 mm conduit	R/mt	30.00		
d)	4 x 6 sqmm Copper Wire with 25 mm conduit	R/mt	20.00		
2	Suppling, making, testing & commissioning of end termination with brass mettalic double compression glands suitable for the following sizes of XLPE Al. conductor arnoured cables including proper sizes of copper thimbles etc. as required.				
a)	4 C x 50 Sq. mm Al. Cable	Nos	4.00		
b)	4 C x 25 Sq. mm Al. Cable	Nos	4.00		
c)	4 x 10 sqmm Copper Wire	Nos	4.00		
d)	4 x 6 sqmm Copper Wire	Nos	4.00		
	TOTAL CARRIED OVER TO SUMMARY			**(B)**	

C)	**DISTRIBUTION BOARDS**				
	Supplying, installation, testing & commissioning of following type wall mounted Horizontal TPN/SPN distribution board of double door type design made out of 16 gauge MS sheet with supplying and fixing following accessories including painting, interconnections, painting, earthing and labeling etc. as required.				
1.0	4 WAY TPN DB (PDB)				
	Incoming				
a)	63Amp TPN MCB (10KA) - 1 No				
b)	63Amp DP RCCB (30mA) -1 Nos				
	Busbars				
c)	100 Amp TPN copper busbars - 1 Set				
	Outgoing				
d)	10/16/20/25 Amp SP MCB (10KA) - 12 Nos	Set	1.00		
	Neutral links - 3 Nos (Separate for each phase)				
2.0	4 WAY TPN DB (LDB)				
	Incoming				
a)	40Amp TPN MCB (10KA) - 1 No				
b)	40Amp DP RCCB (30mA) - 1 Nos				
	Busbars				
c)	100 Amp TPN copper busbars - 1 Set				
	Outgoing				
d)	10/16/20/25 Amp SP MCB (10KA) - 12 Nos	Set	1.00		
	Neutral links - 3 Nos (Separate for each phase)				
3.0	4 WAY TPN DB (UPS)				
	Incoming				
a)	40Amp TPN MCB (10KA) - 1 No				
b)	40Amp DP RCCB (30mA) - 1 Nos				
	Busbars				
c)	100 Amp TPN copper busbars - 1 Set				
	Outgoing				
d)	10/16/20/25 Amp SP MCB (10KA) - 12 Nos				
	Neutral links - 3 Nos (Separate for each phase)	Set	1.00		
	(Separate for each phase)				
4.0	63 Amp. 4 P ,25ka MCB with Box for UPS	Set	2.00		
	TOTAL CARRIED OVER TO SUMMARY			**(C)**	
D)	**POINT WIRING**				

1.0	Wiring for switch controlled Light Point with 3 x 1.5 Sq. mm PVC insulated FRLS multistrand copper conductor 1100 Volt grade wires in PVC surface/recessed conduit with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting and filling chases for recessed conduiting and including the cost of supplying and fixing a 6 Amp 240 Volt grid plate mounted switch with moulded cover plate in zinc chromate passivated MS box, and costing circuit wiring with 3 x 2.5sq. mm 1100 volt grade PVC insulated FRLS Multistrand copper conductor wires, inPVC conduit complete as per specifications and as required.				
(i)	Primary Point	Points	30.00		
(ii)	Secondary Point	Points	20.00		
2a	Wiring for 5 pin 6 A Light plug point with 3 x 1.5 Sq.mm PVC insulated FRLS multistrand copper conductor 1100 Volt grade wires in **recessed/surface FRLS PVC conduit** with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting & filling chases for recessed conduiting, including the cost of providing & fixing 1 No. Modular type 3 pin 6 A socket outlet controlled by 6 A switch in zinc chromate passivated MS box, and circuit wiring with 3 x 2.5 sq mm complete as per specfications and as required.	Points	15.00		
b	Wiring for 3 nos. 5 pin 6 A Light plug ups point controled by 6 A Switch with 3 x 2.5 Sq.mm PVC insulated FRLS multistrand copper conductor 1100 Volt grade wires in **recessed/surface PVC conduit** with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting & filling chases for recessed conduiting, including the cost of providing & fixing 1 No. Modular type 3nos.5 pin 6 A socket outlet controlled by 6 A switch in zinc chromate passivated MS box, and circuit wiring with 3 x 2.5 sq mm complete as per specfications and as required.	Points	11.00		
3.0	Wiring for following. 6 pin 6/16 A Power plug point controlled by 1 No. 16A Switch with 3 x 4.0 Sq. mm PVC insulated FRLS multi strand copper conductor 1100 Volt grade wires in recessed/surfacePVC conduit with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting chases for recessed conduiting, including the cost of providing & fixing 1 No. Modular type 6 pin 16 A socket outlet controlled by 1 No. 16 A switch in zinc chromate passivated MS box, complete as per specification and as required.	Points	5.00		
4.0	Wiring for ceiling/wall fan Point with 3 x 1.5 Sq. mm PVC insulated FRLS multi strand copper conductor 1100 Volt grade wires in surface / recessed, PVC conduit with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting and filling chases for recessed conduiting and including the cost of supplying and fixing a 6 Amp 240 Volt grid plate mounted switch & 300W electronic regulator with moulded cover plate in zinc chromate passivated MS box, and including the cost of circuit wiring with 3 x 2.5sq. mm 1100 volt grade PVC insulated FRLS multi strand copper conductor wire, inPVC conduit complete as per specifications and as required.	Points	13.00		

5.0	Wiring for exhaust fan Point with 3 x 1.5 Sq. mm PVC insulated FRLS multi strand copper conductor 1100 Volt grade wires in surface / recessed PVC conduit with accessories including cost of providing saddles etc for surface conduiting and/or cost of cutting and filling chases for recessed conduiting and including the cost of supplying and fixing a 6 Amp 240 Volt grid plate mounted switch with moulded cover plate in zinc chromate passivated MS box, and including the cost of circuit wiring with 3 x 2.5sq. mm 1100 volt grade PVC insulated FRLS multi strand copper conductor wire, inPVC donduit complete as per specifications and as required.	NOs	3.00		
6.0	Wiring for 20A Single Phase metal clad socket outlet with 2 x 4 +1 x 2.5 sqmm PVC insulated FRLS multistrand copper wire of 1100 volt grade in surface / recessed PVC conduit pipe with accessories including supply and fixing 20A 3pin metal clad plug and socket and 20A SP MCB (MD) in IP 44 Poly carbonate box complete as per specification and as required.	Points	5.00		
7.0	Providing and fixing of following sizes of **PVC Flexible Conduits** suitable for various applications, halogen free, oil and petrol resistant, flame retardant, self extiguishing, high compressive strength and good wearing properties along with connectors complete with conduit gland & all accessories required.				
a)	25mm dia	RM	60.00		
	TOTAL CARRIED OVER TO SUMMARY			**(D)**	
E)	**TELEPHONE SYSTEM**				
1.0	Supply & fixing the following sizes of PVC conduit in recessed or on surface of wall . False ceiling including cutting the wall and making good the same as required.				
a)	25 mm dia	RM	55.00		
2.0	Supply and fixing of RJ11 moduler Telephone outlet in Zinc chromate passivated M.S. Box and Modular Plate including cost of M.S.box, modular plate and connections etc as required.	Nos.	5.00		
3.0	Supply & fixing the following sizes of 16 SWG Krone telephone tag blocks housed in suitable sizes of powder coated MS boxes with hinge cover complete as required.				
b)	10 pair telephone tag block	Nos.	1.00		
4.0	Supplying & laying the following sizes of PVC insulated and overall sheathed taped telephone cables of 0.51mm dia size inPVC conduit recessed in wall or on surface of wall including cutting the chases in making good the same and connection etc. complete as required. (From TTB on Ground Floor to Upper Floor)				
a)	2 pair telephone wire	RM	140.00		
c)	10 Pair telephone cable	RM	25.00		
	TOTAL CARRIED OVER TO SUMMARY			**(E)**	
F)	**COMPUTER DATA NETWORKING**				
1.0	Supply & fixing the following size of PVC conduit in Floor/Surface of wall, including cutting the Floor/Wall and make the good the same as required **(For Switcher to Data point.)**				

a)	25 mm dia	Mtrs	65.00		
2.0	Supply and fixing flush steel box for computer data outlet dully recessed in wall complete computer outlet RJ 45 including connect etc. required.	Nos.	14.00		
3.0	Supply and drawing of cat 6 Data cable in existing conduit with suitable clamp and saddles and other accessories required making connection on both the ends.	Mtrs	340.00		
4.0	Removing of branch existing data rack and refixing in new branch including required hardware and connection all complete.	Nos.	1.00		
5.0	Removing of branch existing data switch and refixing in new branch including required hardware and connection all complete.	Nos.	1.00		
	TOTAL CARRIED OVER TO SUMMARY			**(F)**	
G)	**SUPPLY & INSTALLATION FANS FIXTURES & LIGHTS**				
1.0	Supply & installation , testing & commissioning of 36" **ceiling Fan** complete with all accessories such as blades, canopy etc. including wiring the down rod with 3 x 1.5 sq mm FRLS PVC insulated multistranded copper conductor wires and earthing the fans etc. complete as required.	Nos.	2.00		
2.0	Supply & installation , testing & commissioning of wall Mounted Fan 500mm Sweep. complete with all accessories such as blades, canopy etc.Connection with 3 x 1.5 sq mm FRLS PVC insulated multistranded copper conductor wires from the socket outlet to the fan earthing etc. . complete as required.(Wall Mounted Fans Bracket fans sweep 500 mm)	Nos.	5.00		
3.0	Supply & installation, testing & commissioning of 12/9" Exhaust fans on existing opening in wall including all fixing hardware, louvers, shutters etc. Connection with 3 x 1.5 Sqmm FRLS PVC insulated multistranded copper conductor wire from the socket outlet to the fan earthing etc. complete as required.	Nos.	2.00		
4.0	Supply and Installation of unpacking, assembling, testing, & commissioning of All type of Recessed / Surface mounted Lighting Fixtures (as approved by client/architect) including all fixing hardwares complete as required S/F of 600 x 600 LED recessed mounted (LED 36 Watt 6500 K in false ceiling)	Nos.	19.00		
5.0	Suppy and Installation of storing, unpacking, assembling, testing, & commissioning of All type of Recessed / Surface mounted Lighting Fixtures (as approved by client/architect) including all fixing hardwares complete as required (LED Down Lighter 12 Watt-)	Nos.	17.00		
6.0	Suppy and Installation of storing, unpacking, assembling, testing, & commissioning of All type of Recessed / Surface mounted Lighting Fixtures (as approved by client/architect) including all fixing hardwares complete as required (LED tube Light 20 watt)	Nos.	8.00		
	TOTAL CARRIED OVER TO SUMMARY			**(G)**	
H)	**EARTHING**				

1.0	Earthing with copper plate electrode 600x600x3mm including accessories & providing masonary enclosure with MS cover plate having locking arrangmnt, watering pipe and excavation in soil 6 MTRS minimum, including salt and charcoalas required including P&F 8 Guaze SWG copper wirein recessor surface for earthing as per design & detail complete. Including Supplying, laying & terminating earth connection with 8 SWG Copper wire.	No.	2.00		
	TOTAL CARRIED OVER TO SUMMARY			**(H)**	
I)	**DISMANTALING, REMOVING AND SHIFTING**				
1.0	Dismantelling & removing safely of existing old electrical/ Data/Telephone/ fire/security Cables,wires and fixtures and depositing them with bank including old fans, lights, panels,DB's, switches,fixture etc.	Job	1.00		
2.0	Removing of branch existing Ceiling fan and refixing in branch including required hardware and connection all complete.	No.	8.00		
3.0	Providing and Making temporary connections as per Branch requirement and shifting of points all across the Branch and for workstations (Electrical, data, UPS and telephone) to enable smooth functioning of the branch during renovation all complete as per the instructions of Bank's Engineer/ Architect. Item to include supplying all wires, cables,conduits etc. for the same. Nothing extra shall be payable in this	Job	1.00		
	TOTAL CARRIED OVER TO SUMMARY			**(I)**	
(J)	**UPS RE- INSTALLATION**				
1.0	Removing of existing branch UPS system and refixing/Installation as per new wiring including required connection,accessories.complete all respect.	Job	1.00		
				(J)	

A)	**MV PANEL BOARDS**				
B)	**MV CABLES**				
C)	**DISTRIBUTION BOARDS**				
D)	**POINT WIRING**				
E)	**TELEPHONE SYSTEM**				
F)	**COMPUTER DATA NETWORKING**				
G)	**SUPPLY & INSTALLATION FANS FIXTURES & LIGHTS**				
H)	**EARTHING**				
I)	**DISMANTALING, REMOVING AND SHIFTING**				
J)	**UPS RE- INSTALLATION**				
	TOTAL OF ELECTRICAL WORK (EXCLUDING GST)				
	Discount if any (Only on Excluding GST Amount Only)				
	Net Amount (After Discount if any - Excluding GST)				
	GST as Extra as applicable				
	Grand total with GST Amount				

Place :-

Date :-

Seal and Signature of the contractor with address