ELECTRICAL WORKS AT PMO, KARNATAKA GRAMIN BANK, @ DHARAWAD

PART A. Bill Of Quantities For Electrical and LV Works

Sl#	Description	Qty	Units	Rate Rs.	Amount Rs.
A	**A - INTERNAL ELECTRICAL WORKS**				
A.1	**LT PANELS**				
	Supply Installation,testing and Commossioning of following L.T PANEL made up of 16SWG CRCA sheet for body and 14 SWG CRCA sheet for door, indoor type, floor mounting, powder coated, with necessary hard ware, interconnection wiring & accessories complete				
	Ref SLD -Main panel	1	Each		
	Ref SLD -UPS panel	1	Each		
A.2	**L.T CABLES:**				
	Supply, laying and testing of 1.1/11KV, armoured, PVC insulated, Copper cables. Cable shall be laid in existing Ducts/trench/Cable Tray. (Quantity considered is tentitive, actual measurement is as per site condition).				
A.2.1	3.5C x 95Sqmm XLPE 1.1KV Al. Armoured cable	60	Mtrs		
A.2.2	4C x 50Sqmm XLPE 1.1KV Al. Armoured cable	20	Mtrs		
A.2.3	1C x 16Sqmm copper flexible cable(R/Y/B/N)	30	Mtrs		
A.2.3	1C x 6Sqmm copper flexible cable(R/Y/B/N)	30	Mtrs		
A.3	**CABLE END TERMINATION:**				
	End terminations of the below listed PVC cables including supply of brass glands, solders crimping type copper lugs etc complete.				
A.3.2	3.5C x 95Sqmm XLPE 1.1KV Al. Armoured cable	4	Each		
A.3.2	4C x 50Sqmm XLPE 1.1KV Al. Armoured cable	2	Each		
A.3.3	1C x 16Sqmm copper flexible cable(R/Y/B/N)-LUGS	4	Each		
A.3.4	1C x 6Sqmm copper flexible cable(R/Y/B/N)--LUGS	4	Each		
A.4	**MCB Distribution board.**				
	Supply, Installing, Testing and commissioning of following MCB Distribution Board made out of 16SWGMS sheet enclosure, double door, with neutral and earthing busbar. Rate shall included all necessary accessories to complete the job.				
A.4.1	1 Phase 12 way,SPN DB	6	Each		
A.4.3	1 Phase 6 way,EPN DB	3	Each		
A.4.4	2pole Enclosure for MCB	6	Each		
A.4.4	4pole Enclosure for MCCB with 100A MCCB	1	Each		
A.4.5	2pole Weather proof Enclosure for 2ple 32A MCB	4	Each		
A.5	**RCCB's**				
	Supply, Installing, Testing and commissioning of following RCCB's in above DBs.Rate shall included all accessories to complete the job.				
A.5.1	25A,100mA,2Pole Type RCCB	3	Each		
A.5.1	40A,100mA,4Pole Type RCCB	11	Each		

A.6	**MCB's.**				
	Supply, Installing, Testing and commissioning of following 10KA MCCB's in above DBs.Rate shall included all necessary accessories to complete the job.				
A.6.1	10/20/32A,10KA,SP,MCB C-Curve	30	Each		
A.6.2	10/20/25A,10KA,SP,MCB D-Curve	18	Each		
A.6.3	25A,10KA,2P,MCB C-Curve	6	Each		
A.6.4	20/32A,10KA,TP,MCB C-Curve	2	Each		
A.6.5	63A,10KA,4P,MCB C-Curve	1	Each		
A.7	**CIRCUIT WIRING**				
	Supply & laying following lighting/power /sub-main circuit of 660/1100V grade FLRS copper wires, with all conduit and wiring accessories complete.				
A.7.1	Submain circuit : 4C x10Sqmm cu cable in PVC conduit	15	Mtrs		
A.7.2	Submain circuit : 4runs of 6Sqmm + 1 runs of 4Sqmm PVC insulated copper wires in suitable conduit	50	Mtrs		
A.7.2	Submain circuit : 2 runs of 6Sqmm + 1 runs of 4Sqmm PVC insulated copper wires in suitable conduit	150	Mtrs		
A.7.3	Submain/Power circuit : 2 runs of 4Sqmm + 1 runs of 1.5Sqmm PVC insulated copper wires in pvc conduit	80	Mtrs		
A.7.4	Lighting/Power circuit/UPS : 2 runs of 2.5Sqmm + 1 run of 1.5Sqmm PVC insulated copper wires in existing pvc conduit	1450	Mtrs		
A.7.5	2 runs of 1.5Sqmm + 1 run of 1.0Sqmm PVC insulated copper wires in existing conduit	500	Mtrs		
A.7.6	4 runs of 4Sqmm + 1 run of 2.5Sqmm PVC insulated copper wires in conduit	10	Mtrs		
	Note: **Light ciruit shall be considered only form DB to first switch board/Light point.**				
A.8	**POINT WIRING(Modular Type)**				
	Point wiring of following points using 1100V grade 1.5 Sqmm multi strand ,PVC insulated ,copper conductor in necessary size PVC conduit in a surface conduit system. The wiring shall be complete with all conduit and wiring accessories like deep juntion box, GI pull wires, etc. 1.0 sqmm Green colour PVC insulated copper conductor shall be used for earthing. light point wiring first point 9meter, after that considering circuit wiring				
A.8.1	One light point controlled by 6A SP switch	35	Each		
A.8.2	Two light point controlled by 6A SP switch	30	Each		
A.8.3	Three light point controlled by 6A SP switch	20	Each		
A.8.4	Four TO 5 light point controlled by 6A SP switch	4	Each		
A.9	**POWER POINTS & WIRING**				
	Supply and installing of power points, includeing all necessary accessories like MS box, face plates etc etc compelet.				
	Note: Wiring shall not be included.				
A.9.1	Multi pin 6A socket without switch.	10	Each		
A.9.2	Multi pin 6A socket with switch.	15	Each		

A.9.3	3NO 6A Socket control by 1no 15A switch				
	with 1no dummy cover	25	Each		
A.9.4	2NO 6A Socket control by 1no 10A switch				
	with 1no dummy cover	50	Each		
A.9.5	16Amps socket controlled by a 16A SP switch				
	with neon indicator	30	Each		
A.9.6	Multi pin 16A socket without switch.	2	Each		
A.10	**PVC Conduits**				
	Supply and laying of following sizes ISI marked PVC conduit laid above false ceiling/ chased through wall with all necessary accessories like C channel, threaded rods, bolts, nuts etc complete for Power wiring/Lighting/CCTV/UPS Circuits.				
A.10.1	19mm Dia 2mm Thick	150	Mtrs		
A.10.2	25mm Dia 2mm Thick	1400	Mtrs		
A.10.3	32mm Dia 2mm Thick	100	Mtrs		
A.10.3	25mm Dia PVC flexible	220	Mtrs		
A.11	**LADDER TYPE CABLE TRAY:**				
	Supply and fixing MS Perforated type cable tray made up of 2mm thick Galvanised sheet to be laid in below slab/duct. complete.(Rate shall include accessories like Bottom C channel support at every 1.5Mtr with 10mm thick GI threaded rod, Anchor fasner with bolt & nuts etc complete)				
A.11.2	200mm Wide x 50mm Height	50	Mtrs		
A.11.3	100mm Wide x 50mm Height	r/0	Mtrs		
A.11.3	100mm Wide x 50mm Height -PVC raceway	20	Mtrs		
A.12	**METALLIC RACE WAYS WITH COVER**				
	Supply and fixing of covered Raceway with horizontal & vertical bends, reducers, Tee's, cross over , suitable supports and brackets and other accessories as required. The raceways shall be anti corrosive powder coated with RAL 7032(Siemens grey . The raceways shall be of 14 G thickness and shall have a welded GI slotted angle at every 1.5m for tieing the cables as well as clamping the body earthing GI earthing strips. The raceways shall be joined together with powder coated anti corrosive GI plates and cadmium coated anti corrosive bolts and nuts .Raceway poles only should be used to drop down the cables. Do not clamp the raceways onto the wall or to the partition and also do not bury any cables within the wall or the partition . The IS standard for powder coating IS 13871. No warping, & raceways shall be temperature resistant only. Two independent hot dip galvanized GI weldable earth strips shall be routed within the GI raceways specified above all through the routing of the cable from the origination to the destination point .The earthing strip size shall be 25X3MM only. The joints shall be welded only and shall not be painted . No bolting of the GI strip is allowed .This has to be welded between the joints as well as the main connection points to the body earthing grid of the building which which is nearest to the point of work . The Tray shall be Strip galvanized for corrosion protection confirming to DIN EN 10346. The trays should be tested for a safe working load of 150 Kegs with a span distance of 1.5 meters and the deflection should be within the limits as per standard. The safety factor shall be 1.7 times of the safe working load.				
A.12.4	150mm Wide x 50mm Height with cover	30	Mtrs		

A.14	**SUPPLY AND FIXING OF LIGHT FIXTURE**				
	Supply and Fixing,testing & commissioning of following light fixtures , which shall included all necessary accessories like chain support, connectors,jump wires etc complete.				
A.14.2	15w surface light	70	Each		
A.14.3	2'x2' 36w LED light	75	Each		
A.14.5	300mm dia Exhaust Fan	12	Each		
A.14.6	400MM wall fan	8	Each		
A.15	**POP-UP FLUSH MOUNTING BOXES FOR TABLE**				
	Supply, Installing, of following floor mounted Pop-up service outlets for Power/Data.				
A.15.1	6Module cable cubby with 1no. 3 pin 6A socket and 1no. HDMI outlet.	1	Each		
A.15.2	8Module cable cubby with 3nos. 6A 3pin socket with 2 HDMI outlet	R/0	Each		
A.16	**MISCELLANEOUS ITEMS**				
A.16.2	Supply & Installing of 2 module box	35	Each		
A.16.4	MS Fabrication work for supports, clamps, stands etc which includes 2 coats of primer, 2 coats of enamel painting, required accessories like bolts, nuts, anchor fasteners etc. complete.	50	Kgs		
	TOTAL OF PART-A				
PART B - BILL OF MATERIALS FOR NETWORKING ,CCTV AND TELEPHONE WORKS					
Sl#	**Description**	**Qty**	**Units**	**Rate Rs.**	**Amount**
B	**NETWORKING**				
B.1	SITC of UTP 4 pair 23 AWG CAT 6 LAN Cable in the existing surface/ recessed steel/ PVC conduit as required. 4 Pair CAT6 Unshielded, Twisted Pair (U/UTP) Cable 305 mtr per Box. Blue/Orange/White/Green in colour conforming to the following standards like ANSI EIA/TIA 568 C.2, EN50173, IEC 11801 3rd ED, Cable Dia 6.1 ± 0.3, Cross-member (+) fluted Spine/isolator for uniform separation for all pairs. /truncking.23AWG Approved Make.	2500	Mtrs		
B.2	SITC of Single Port Face Plate Flush & surface mount. Polycarbonate Hi-Grade Plastic FR Grade with ABS underplate & CRCA metal fram & UV Resistant 850 degree C/ Glow Wire Test. The face plate Size should be of minimum 86x86mm Shall Exclude back box) Approved Make.	48	Each		
B.3	SITC of Dual Port Face Plate Flush & surface mount. Polycarbonate Hi-Grade Plastic FR Grade with ABS underplate & CRCA metal fram & UV Resistant 850 degree C/ Glow Wire Test. The face plate Size should be of minimum 86x86mm accessories.(Rate Shall Exclude back box) Approved Make.	28	Each		

B.5	SITC of Cat6 Tool less Information outlet for Data & Voice. Cat6 UTP RJ45 socket with built in crimping mechanism with capability of retermination without refreshing the wires. Toolless RJ45 Information outlet with insertion cycle (in & out) should be 2500 times (I/O) along with front side Label holder and transparent shutter. The Information Outlet connector shall be of gold/nickel, thickness of gold > 0.8 µm. The connectors shall be compatible as per IEEE 802.3bt standard for POE++ application. White Color (Rate Shall Exclude back box & face plate. But includes test certificates) Approved Make.	200	Each		
B.6	Supply, Installation, testing and commissioning of 24 port Cat 6 19" Modular Toolless Patch Panel (loaded) enable all possible combinations of the various types of cable (UTP, FTP, SFTP) mounted on the same panel by using various toolless connector blocks/modules. Have a metal structure enabling them to be durably fixed to the uprights of the 19" chassis and assuring automatic grounding between toolless RJ-45 connectors, the panel, and the 19" uprights of the enclosure. Include rear cable support with plastic cable guides to hold cable without need for cable ties. Include quick mounting system to mount the panel into the 19" rails without use of cage-nuts. These may be used to secure the connections of wifi access points, IP cameras, servers, or other critical devices. Front Removal IO's option for maintenance and trouble shooting with 6 Different Colours Labels for Labelling & Identification of Individual Ports. Tested and guaranteed under dual circuit IEEE PoE++ more than 90W for up to 2500 on-load connections / disconnections. Approved Make.	7	Each		
B.7	Supply and fixing of White color CAT6 blank plate.	10	Each		
B.8	Supply 42Ux800Wx1000D Rack with Multi hollow extrusion Aluminium profile frame, Modular Constuction of the rack made of 4 vertical , 4 horizontal & 4 depth extruded aluminum alloy multi hollow profiles bolted and joined together with Links and Corner Block. 2/3 pairs of support channel to equate the load evenly, TOP Cover bolted with cable entry Front Lockable hexagonal Perforated steel Door - Single & Rear Lockable hexagonal Perforated steel Door - Double with Cam Lock Power distribution unit - 10 Socket 6/16 amp, Metal Cable manager - 1U - 4, Hardware packet - 20 Set - 2 Pkt, Monitor Shelf - 1. 4 Fan Mount provision on top cover Standard - IS 9606-1980, UL 2416, IEC EN 60529, IEC EN 62262, ISO 9001:2008, ISO14001: 2015, IP 20 according to IEC 60529:2013, IK08 according to IEC EN 62262:2002, Salt spray test according to ISO 9227 (NSS test) and IEC EN 60068-2-11 (Ka test) for 168 hours: degree of Rusting Ri1 according to ISO 4628-3, propagation ≤1 mm according to ISO 4628-8.	1	Each		
B.9	SITC of CAT6 UTP Patch Cord - 2 mtr with cross separator , Manufactured from stranded wires for longer flex-life, Conforming to the following standards like EN 50173, ISO/IEC 60603-7 & 11801/IEC 60332-1, UL VW-1 with tensile strength >50N number of insertion is 750. Approved Make.	50	Each		

B.10	SITC of CAT6 UTP Patch Cord - 1 mtr with cross separator , Manufactured from stranded wires for longer flex-life, Conforming to the following standards like EN 50173, ISO/IEC 60603-7 & 11801/IEC 60332-1, UL VW-1 with tensile strength >50N number of insertion is 750. Approved Make.	50	Each		
B.11	**Wall mount rack (9U)** SITC of Wall Moun 9Ux600Wx600D Top and bottom cover with precut cable entries (upper and lower - 300x50mm Centered in width) which can be knocked with a mallet and to be equipped with the brush. 2 Fans provision at the top, The door is made of a flat colourless transparent glass of 4mm thick with screen- printing of charcoal grey RAL 7016 on the vertical edges and is fitted with locking bolt. The door is removable and reversible. Rear with Wall Mounting brackets Four 19'' uprights are perforated with 9.5 x 9.5mm square holes, 19" uprights with dual marking of the Us and can be adjusted in depth by 25mm steps. The 19'' uprights are perforated with 9.5 x 9.5mm square holes, Permissible load: 4 kg/U. Glass Door/6U/WM(GD-6-550) Horz. Cable Organiser/1U/Loop(HCO-1-L) Server /IT Rack mount power distribution unit, 1Ph, 230V, 5A, 50/60Hz, Zero U standard with 3 X Indian Round Pin, 5A, Inlet Plug type 6A Indian Round Pin, 5A Fuse - PDU Rating 1.2KVA/ Side feed-1 mt/ Black with Mounting Hardware-CR (Pack of 20) ,Cantilever Shelf/Type2/1U Epoxy polyester paint applied by electrostatic dusting with 60-80 micron thickness, All components- RAL 7035				
	Horizontal power distribution unit, Metal Cable manager, Hardware packet and Cantilever Shelf, 2 Fan Mount provision on top cover	R/0	Each		
	Standards - IEC 60529 EN 60529, IEC 62262 EN 62262, DIN 41494, EIA 310, IEC 60297, UL Certified Approved Make.				
B.11	**Floor mount rack (22U)-Floor mount** Supply & Erection of following 22URack Frame/600x600/Steel/FM/Casters Type 2 with Glass door and metal door,Horz. Cable Organiser/1U/Loop Glass Door/6U/WM(GD-6-550) Horz. Cable Organiser/1U/Loop(HCO-1-L) Server /IT Rack mount power distribution unit, 1Ph, 230V, 8A, 50/60Hz, 2U standard with 6 X Indian Round Pin 5A, Inlet Plug type 6A Indian Round Pin, 8A Fuse - PDU Rating 1.8KVA/Side feed-1.5Mt/ Black PDU-H-1-IND-A6-X2-Y1-Z0				
	ITE / Server Rack Air Circulation module/Tower Mount/180CFMy	0	Each		
	and necessarys accessories Approved Make.				
B.11	**TELEPHONE CABLE AND TAG BLOCK**				
	Supply & Erection of following pair Krone type telephone tag block mounted in lockable enclosure IP-42 grade with all necessary accessories complete. Rate shall also include end termination of cables.existing conduit with all necessary accessories like GI pull wire, etc etc complete. Approved Make.				
B.11.1	50 Pair Unarmoured 0.5mm Dia copper telephone cable laid	r/0	Mtrs		
	in exisitng P.V.C conduit .				

B.11.1	30 Pair Unarmoured 0.5mm Dia copper telephone cable laid	0	Mtrs		
	in exisitng P.V.C conduit .				
B.11.2	2pair 0.5mm copper tele. wire in exisitng P.V.C conduit laid	750	Mtrs		
	Approved Make.				
B.11.2	1.5sq mm speaker cabel	r/0	Mtrs		
	Approved Make.				
B.11.3	30Pair	0	Each		
B.11.3	50Pair	r/0	Each		
B.11.4	Co-axial TV outlet	0	Each		
B.11.5	RJ-11 Telepone outlet	10	Each		
B.12	**END TERMINATION OF TELEPHONE CABLE**				
	End terminations of the below listed multi pair tel. cable using all necessary accessories like glands, ferrules, hard ware etc etc complete. Approved Make.				
B.12.1	30 Pair	0	Each		
	TOTAL OF PART B				
PART C - BILL OF MATERIALS FOR AC WORK					
1.0	Supply of inverter 4 WAY CASSETTE/HI WALL UNIT type indoor - outdoor Units with Energy Efficient Tropical Swing/Rotary Compressor, Anti Rust Gold Fin & Blue Fin Technology, ESP & Group Controls, Autorestart, Etc.. along with additional features				
a	2.0 TR - Four Way Cassette Unit	9	Nos		
b	3.0 TR - Four Way Cassette Unit	2	Nos		
d	1.5 TR - Hi Wall Unit	3	Nos		
2.1	Instalaltion of Hi wall/cassette Units.				
a	1.0/2.0/1.5/3.0/4.0 TR	14	Nos		
2.2	**REFRIGERANT PIPING**				
	Supply and installation of copper refrigerant piping complete with round nitrile rubber insulation, necessary supports & Fitting etc.				
a	Cu. Piping for Hi Wall Unit - Soft drawn (aproximate and actual will be billed)	130	Rmt		
3.0	**ELECTRICAL CABLING**				
	Supply & Installlation of required copper cable core for Interconnecting electrical & control cabling with necessary supports & fittings between IDU & ODU, Main incoming power cabling from MCB to ODU,etc				
a	4 Core x 2.5 Sq.mm - From ODU to IDU (aproximate and actual will be billed)	140	Rmt		
4.0	**AC ODU STAND**				
	Supply & Installation of Ceiling mount stand for Outdoor units	14	Sets		
5.0	**DRAIN PIPING**				

	Supply, installation PVC condensate drain pipe with 6mm insulation and necessary fittings, supports, etc., (Aproximate and actual will be billed)				
a	25mm dia	50	Rmt		
b	32mm dia	-	Rmt		
6.0	**Transportation, Lifting & shifting of AC Units AND MATERIALS**	1	Lot		
7.0	**Stabilizer 5/4 KVA**	-	nos		
8.0	**Drain pump**	-	nos		
9.0	**Pressure testing, vacuming and commisioning charges**	14	nos		
10.0	**Additonal gas charging for new units**	1	Lot		
11.0	**Supply and installation of cable tray with complete fittings and supports. 300x100mm.**	Ro	Rmt		
12.0	**core cuttings and wall opening.**	Ro	Nos		

r/0 or Ro -> To be calculated and quoted by bidder As per the actual requirement/calculation

	TOTAL OF PART C	

GRAND TOTAL (PART A+ PART B + PART C)	

(TOTAL IN WORDS: RUPEES_____)

THE ABOVE AMOUNT IS EXCLUSIVE OF GST (GST IS PAYABLE AT APPLICABLE RATES)