

**MINISTRY OF HEALTH & FAMILY WELFARE,
GOVT. OF INDIA, NEW DELHI**

Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)

TENDER

FOR

**“Providing and fixing Acoustics work, False Ceiling,
auditorium chairs and other associated works in
Auditorium of Academic block at Kolkata Medical College,
Kolkata (W.B.) under PMSSY”**

(Package-I)

(Volume –V)

BILL OF QUANTITIES

December’ 2011



**HSCC (INDIA) LTD.
(CONSULTANTS & ENGINEERS FOR MEGA HOSPITALS & LABORATORIES)
E-6(A), sector-1, NOIDA(U.P) 201301 (India)**

Phone : 0120-2542436-40

Fax : 0120-2542447

Tender No. HSCC/PMSSY/KMC/2011

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY”

(Package-I)

BILL OF QUANTITIES

BILL OF QUANTITIES

OF

CIVIL WORKS

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)						
CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	FALSE CEILING					
1.01	Providing and fixing tiled False Ceiling of approved materials of size 595x595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanized @ 170 gsm/sqm.) consisting of main "T" runner with suitably spaced at joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 21 x 21 x0.30 mm .					
	and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanised level clips spaced at 1200mm center to center along main T, bottom exposed width of 24mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge.(The rate is excluding the cost of tiles which will be paid for separately).	1060	Sqm			
1.02	Providing 15mm thick Mineral Fibre/ soft fibre acoustic False Ceiling Tiles in the above frame work, with the following specifications:					
a)	With textured square edge tiles of NRC 0.94 base panel with humidity resistance of 90% RH, density 48 Kg/m3 as per ISO-4611,ASTM C-165 ,ASTM C-303 , ASTM C-1104 and light reflectance upto 85% with Leed points Green Performance certified, and Thermal conductivity K=0.082 W/Mk with sag resistance with normal edge profile. 15mm thick Ceiling tile meeting the fire test required having Class 'A' rating for Flame Ignitability test as per ASTM-E-84.	720	Sqm			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
b)	With textured square edge black tiles for stage ceiling, of NRC 0.94 with humidity resistance of 90% RH as per ISO-4611,ASTM C-165 ,ASTM C-303 , ASTM C-1104 and low light reflectance. 15mm thick Ceiling tile meeting the fire test required for surface burning test as per ASTM-E-84.	140	Sqm			
1.03	Providing and fixing at all height false ceiling including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and					
	30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with :					
a)	12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part I.	200	Sqm			
1.04	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183 density 24kg/m3, 50mm thick, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5mm x 24g wire and mesh, for false ceiling and wall paneling.	2240	Sqm			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY”.(Package – I)						
CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	WALL PANELLING					

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.05	Providing and fixing skirting of Pre-laminated with (one side decorative and other side balancing lamination) flat pressed, 3 layer or graded particle board (medium density) Grade I, Type II, IS :12823 marked, with necessary fixing arrangements and screws including drilling necessary holes for rawl plugs etc. and priming coat on unexposed surface complete :					
a)	25 mm thick	50	Sqm			
1.06	Providing and Fixing paneling on wall up to dado height with pre-laminated (one side decorative & other side balancing lamination) MDF board Panels (Gde 1 Exterior Grade) of approved quality of size 1200x600x12 mm with Z- clips or headless nails as required. The laminated MDF panels will comprise to NRC 0.3 and a density of 800 Kg/m ³ , with complete frame work as per details given below:					
	The Panel is to be fixed on GI floor and ceiling channel and wall channel of prime quality cold rolled steel as per IS 513 hot dipped galvanized 120 gsm as per BS 2989 and zinc coating as per IS 277 , to be fixed with nylon plastic sleeves and SS/ CP screws to form the proper framework . The extra channel must be used at openings and junctions as required. The frame will come at every 600 mm centre to centre & the panels of 12mm thickness are to be installed with 20x20 mm first class teakwood section with Z-clip on the board into the GI frame for proper holding and LF Absorption as per the specification and direction of the Engineer.(Fibre glass wool infill to be paid for seperately).	300	Sqm			
1.07	Providing and Fixing wood fibre/ soft fibre based acoustic Panels with fabric of approved quality of size 1200x600x25 mm with PVC H-Spline. The acoustic panel will comprise to NRC 0.95. The Acoustic Panel is to be installed on GI framework and meet the stringent fire test required having Class 'P' rating for Ignitability test as per BS 476 part 5 and Class '1' rating as per BS 476 part 7 for Surface Spread of Flame test. Class 'P' and Class '1' are the highest rating. BS 476 part 6 Fire Propagation index and for Flaming ISO 1182 and Smoke density as per ASTM E 662 besides base panel conform to EN 13168 2000 with complete frame work as per details given below: (Fibre glass wool infill to be paid for seperately).					

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	The Acoustic Panel is to be fixed on GI floor and ceiling channel and wall channel of prime quality cold rolled steel as per IS 513 hot dipped galvanized 120 gsm as per BS 2989 and zinc coating as per IS 277 , to be fixed with nylon plastic sleeves and wooden screws to form the proper framework . The extra channel must be used at openings and junctions as required. Theframe will come at every 600 mm centre to centre & H-Spline to be fixed perpendicular to the wall channels with stainless steel/CP brass screws for fixing Acoustic Panel in plumb, line & level as per the specification and direction of the Engineer incharge.	630	Sqm			
1.08	Providing and fixing on stage wood fibre/ soft fibre acoustical tile (Black panels) of size 1200x600x25 mm of approved brand and manufacture for ceiling and walls in stage area comprising of NRC 0.8 and to meet the stringent fire test required having Class 'P' rating for ignitability test as per BS 476 part 5 and Class '1' rating as per BS 476 part 7 for surface spread of flame test. BS 476 part 6 fire propagation index and flaming ISO 1182 and smoke density as per ASTM E 662 besides base panel conforms to EN 13168 2000. The Acoustical Tile is to be fixed on channel with the help of stainless steel/ CP brass screws at every 230 mm distance interval and 10 mm away from the edges of Tile for proper holding the tile with the GI framework in line & level as per the specification and direction of the Engineer incharge.(Fibre glass wool infill to be paid for seperately).					
	The Acoustic Panel is to be fixed on GI floor and ceiling channel and wall channel of prime quality cold rolled steel as per IS 513 hot dipped galvanized 120 gsm as per BS 2989 and zinc coating as per IS 277 , to be fixed with nylon plastic sleeves and wooden screws to form the proper framework . The extra channel must be used at openings and junctions as required. Theframe will come at every 600 mm centre to centre & H-Spline to be fixed perpendicular to the wall channels with stainless steel/CP brass screws for fixing Acoustic Panel in plumb, line & level as per the specification and direction of the Engineer incharge.	200	Sqm			
	Carpeting					

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.09	Providing and fixing machine tufted loop pile carpet of approved make having total pile weight of 1000 Gm per sqm including underlay of 8 mm thick PU foam fixed to existing floor with synthetic adhesive as approved by the manufacturer, all complete as per specification and direction of engineer in charge.	1100	Sqm			
STAGE						
1.10	Providing and fixing 65x18mm th. 2nd class Teak wood planks of varying lengths (min 450mm) in flooring with Tongue and Groove joints(size of tongue 6x9 mm min) fixed with concealed screwing fixed over 12mm thick commercial ply of approved brand and manufacture with suitable adhesive fixed on 50x50mm section Sal wood framing @ 600mm c/c in both directions fixed over level floor with suitable nuts bolts and fasteners etc.The framing to be filled with 50mm thick fibre glass resin bonded insulation of density 24kg/cum to be supported from back with 19mm, 26G GI chicken wire mesh. PU polishing of teakwood on exposed surface: In horizontal/vertical plane (Rate for flooring shall include providing additional framework required for housing microphone and power outlet junction boxes including providing and fixing hinged 18mm thick teakwood cover for the junction boxes and P/F 150x150x8 mm neoprene rubber pads at every 1200 mm c/c below the frame work, etc all complete as per the directions of engineer in charge.	150	Sqm			
1.11	Steel work in built up tubular trusses including cutting, hoisting fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete.	1000	Kg			
a)	Hot finished welded type tubes.					

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.12	Providing and fixing, in position concealed G.I. section for wall paneling using board of required thickness fixed on the 'W' profile (0.55mm thick) having a knurled web of 51.55mm and two flanges of 26mm each with lips of 10.55 mm placed @ 610mm C/C in perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm. Perimeter channel is fixed on the floor and the ceiling with the nylon sleeves @ 610mm C/C with fully threaded self-tapping drive all screws. Board is fixed to the 'W' profile with 25 mm countersunk ribbed head screws @ 200mm C/C., all complete as per the drawing & directions of engineer-in-charge the joints of the boards are finished with specially formulated jointing compound and 48mm wide jointing tape to provide seamless finish.					
a)	Gypsum board conforming to IS: 2095 - 1996: Part - I .					
i)	12.5 mm thick.	100	Sqm			
1.13	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					
a)	Two or more coats on new work over and including POP punning and applying a coat of suitable primer for gypsum board.	300	Sqm			
1.14	Fabrication, supply and installation of SS 304 grade stage side ladder made of SS 304 grade pipes of 50 mm OD and 1.6 mm thick verticals and 12mm OD and 1.6 mm thick horizontals spaced suitably as directed by the engineer in charge including welding, polishing etc all complete.	60	Kg			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
2.00	DOORS & WINDOWS					
2.01	Providing and fixing powder coated aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make confirming to IS:733 and IS: 1285, powder coated to required shade . (Minimum powder coating of 50 micron), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/ neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium `U'/snap beading for glazing/ panelling, C.P. brass/ stainless steel screws, all complete as per architectural drawings and as directed. (Glazing and panelling to be paid for separately.)					
	(i) For fixed portions	1480	Kg			
	(ii) For shutters of doors, & windows including providing and fixing Stainless Steel friction hinges/ pivots and making provisions for fixing of fittings wherever required including the cost of PVC/ neoprene gasket required as per drawing and as directed. (Fittings shall be paid for separately.)	110	Kg			
2.02	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions, curtain walls etc. with neoprene gasket etc. complete as per the architectural drawings and as directed. (Cost of aluminium snap beading shall be paid in basic item).					
a)	With glass panes of 5.50mm thickness (weight not less than 13.75 kg./sqm.)	160	SQM			
2.03	Extra for providing frostings on glass panes of 10.00 kg/sqm. (4mm thick) instead of ordinary glass panes 10.0 kg/sqm. (4mm thick) respectively in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured)	40	SQM			
2.04	Providing and fixing powder coated aluminium handles (Minimum powder coating of 50 micron to required colour or shade with necessary screws etc. complete.					

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL

Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	125 mm.	170	Each			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
b)	100mm for windows (lockable type)	50	Each			
2.05	Providing and fixing aluminium sliding door bolts powder coated (powder coating not less than 50 Micron) to required colour or shade with necessary nuts, screws etc. complete :					
a)	250 x 16 mm	20	Each			
2.06	Providing and fixing aluminium pull bolt lock powder coated (powder coating not less than 50 Micron) to required colour or shade with necessary nuts, screws etc. complete :	40	Each			
2.07	Providing and fixing 50mmx12mm wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete					
a)	Approved quality Second class teak wood	340	Meter			
2.08	Providing and fixing double action hydraulic floor spring of approved brand and manufacture (conforming to IS : 6315) for aluminium doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box wit slide plate etc. complete as directed. with stainless steel cover plate	20	Each			
2.09	Filling the gap in between aluminium frame & adjacent RCC/Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.Upto 5mm depth and 5	150	Meter			
2.10	Providing and fixing Powder coated aluminium grills made out with special extruded sections as approved fixed with suitable means as directed by engineer in charge etc all complete.	50	Kg			
3.00	FINISHING					
3.01	Supplying and applying dry distemper of approved brand and manufacture (two or more coats) and of required shade on new work, over and including priming coat of whitening to give an even shade.	3470	Sqm			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
3.02	Supplying and applying oil bound washable distemper of approved brand and manufacture to give an even shade.					
a)	New work (two or more coats) over and including a primer coat with cement primer.	2520	Sqm			
3.03	Supplying and applying plastic emulsion paint of approved brand and manufacture to give an even shade in Walls					
a)	Two or more coats on new work	3310	Sqm			
3.04	Providing and applying plaster of paris putty of 2mm thickness (average) over plastered surface to prepare the surface even and smooth complete	3310	Sqm			
3.05	Finishing Walls with Premium Acrylic Smooth Exterior paint with Silicone additives "Snowcrl-XT" or equivalent of required shade.					
a)	New Work (Two or more coats applied @1.43ltr/10 sqm over and including base coat of water proofing cement paint Snowcem Plus or equivalent applied @2.20 kg/10sqm)	2320	Sqm			
3.06	Painting with synthetic enamel paint of approved brand and manufacture of required color to give an even shade:					
a)	Two or more coats on new work over an under coat of suitable shade with ordinary paint including priming coat of ready mixed red oxide zinc chromate primer of approved brand and manufacture.	270	Sqm			
4.00	CARPETS					
	Providing and laying machine made 100% BC olefin level loop pile carpet with adhesive bounded backing including laying 14mm polyurethane foam underlay (32kg/cum density) of approved make as per following specification and as mentioned in the tender					
	Pile weight tufted- 28 OZ./Sq. Yard					
	Pile height- 5MM					
	Backing fabric- Woven polypropylene	100	Sqm			
5.00	Supply & fixing wooden Podium of required size	1	Each			
6.00	Supply & fixing fluorocent signages for Entry & Exit including fire indication in the Auditorium	5	Each			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY”.(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL						
Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.00	Furniture					
7.01	Providing and fixing auto tip up type high back auditorium chairs (as per approved sample) having seat and back made of ply wood upholstered with fabric and moulded PU foam, leg frame assembly fabricated from powder coated MS tube and grouted to floor with foundation expansion bolts, PU armrest with or without cup holder. Total width of chair 64cm and total vertical height from floor to top of back 107cm approx. The upholstery shall be foam laminated stectchable fire retardant fabric of approved quality and shade. kindly correlate with enclosed specification and approved sample.	50.00	each			
7.02	Providing and fixing auto tip up type high back auditorium chairs (as per approved sample) having seat made of upholstered PU foam moulded with ply wood insert, back made of upholstered PU foam moulded with MS tubular frame insert and under structurer made of black powder coated MS and grouted to floor with foundation expansion bolts, armrest under structure is upholstered PU foam moulded with MS insert and arm tops are made of seasoned wood . Total width of chair 61cm (individual)and total vertical height from floor to top of back 100 cm approx. The upholstery shall be foam laminated stectchable fire retardant fabric of approved quality and shade. kindly correlate with enclosed specification and approved sample.	660.00	each			

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

CIVIL

Item No	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.03	Providing and fixing auto tip up type chairs for seminar room (as per approved sample) having seat and back made of ply wood upholstered with fabric and moulded PU foam and under structure made of MS ERW tube welded with CR steel back fixing brackets and HR steel foundation plate fixed with foundation expansion bolts, one piece wooden armrest and retractable desklet. The fabric must be 100% polyester of approved quality and shade, Total width of chair 62cm and total vertical height from floor to top of back 85 cm approx. kindly correlate with enclosed specification and approved sample.	400.00	each			
<p>Note: The (specialized) agency will prepare detail acoustic design based on the above items/ specifications to achieve the prescribed standard norms and obtain approval from the engineer in charge, before execution of the work. The desire performance will be the responsibility of the executing agency.</p>						

BILL OF QUANTITIES

OF

ELECTRICAL WORKS

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1.00	SUB HEAD 1: PANELS & DISTRIBUTION BOARDS					
1.01	MV PANELS					
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enameled painted and having following incoming and outgoing switchgears complete as required.					
i	ESDB-GF-E					
	INCOMER:					
	1 No. 400 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 400 Amp ammeter with selector switch with 400/5A C.T.'s.					
	1 Set of phase indicating lamp with HRC fuses					
	BUSBARS:					
	500 Amp TPN Aluminium busbars					
	OUTGOING:					
	2 No.150 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	3 No.40 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	5 No. 63 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.	1	Set			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
ii	ESDB-FF-E					
	INCOMER:					
	1 No. 150 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 150 Amp ammeter with selector switch with 150/5A C.T.'s.					
	1 Set of phase indicating lamp with HRC fuses					
	BUSBARS:					
	200 Amp TPN Aluminium busbars					
	OUTGOING:					
	3 No.40 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	2 No. 63 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.	1	Set			
iii	ESDB-SF-E					
	INCOMER:					
	1 No. 150 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 150 Amp ammeter with selector switch with 150/5A C.T.'s.					
	1 Set of phase indicating lamp with HRC fuses					
	BUSBARS:					
	200 Amp TPN Aluminium busbars					
	OUTGOING:					
	3 No.40 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	4 No. 63 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.	1	Sets			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
iv	ESDB-LIFTS					
	INCOMER:					
	1 No. 125 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 125 Amp ammeter with selector switch with 125/5A C.T.'s.					
	1 Set of phase indicating lamp with HRC fuses					
	BUSBARS:					
	150 Amp TPN Aluminium busbars					
	OUTGOING:					
	4 No. 63 Amp 415 volts, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	4 No. 40 Amp 415 volts, Double Pole, Moulded Case Circuit Breaker, with phase indicating lamps.	1	Set			
1.02	Supplying & fixing following way, three pole and neutral, prewired, sheet steel, MCB distribution board, 415 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required. (but without MCB & RCCB),					
	i) 4 Way	2	Each			
	ii) 6 Way	2	Each			
	iii) 8 Way	8	Each			
	iv) 12 Way	3	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1.03	Supplying & fixing following way, single pole and neutral, prewired, sheet steel, MCB distribution board, 240 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required. (but without MCB & RCCB),					
	i) 4+8 Way	2	Each			
1.04	Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.					
	i) single pole	376	Each			
	ii) Single pole & neutral (DP)	2	Each			
	iii) Triple pole & neutral (FP)	17	Each			
5.03	Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB), in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i) 40 Amps	2	Each			
	ii) 63 Amps	11	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
5.04	Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i) 32 Amps	17	Each			
	ii) 40 Amps	2	Each			
	iii) 63 Amps	11	Each			
1.07	Supply and fixing switch disconnecter fuse units, 415 volts, 4 Poles with HRC fuses, complete with front drive mechanism with door interlocks, in sheet metal enclosure on surface/recess including connection of incoming and outgoing cables, terminations complete with all accessories etc with all civil works for fixing, and complete as required.					
	i) 63 Amps, Four Pole	1	Each			
1.08	Supply, Installation, Testing & Commissioning 63 Amps, TPN MCCB in a sheet steel enclosure, extended rotary operating mechanism complete with all accessories as required.	3	Each			
	TOTAL SUBHEAD 1.00					
2.00	SUB HEAD 2 : WIRING					

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
2.01	Wiring for light point/fan point/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable (including 1.5 sqmm PVC insulated, copper conductor cable for earthing from switchboard to each point) in recessed steel conduit (including supply & fixing of conduit with all accessories), CI or MS fan boxes and other accessories with modular type switches in suitable size modular metal boxes, base plate & modular cover plates etc. as per technical specifications and complete as required.	779	Point			
2.02	Wiring for twin control light point with 1.5 sq.mm. PVC insulated, copper conductor cable (including 1.5 sq.mm. PVC insulated, FRLS copper conductor cable for earthing from switchboard to each point) in recessed steel conduit (including supply & fixing of conduit with all accessories), with 2 way 5/6A modular type switches in suitable size modular metal boxes, base plate & modular cover plates etc. and complete as per technical specification as required.	32	Point			
2.03	Wiring for 5A light plugs with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable including 1.5 sq.mm. PVC insulated, copper conductor cable for earthing in recessed steel conduit (including supply & fixing of conduit with all accessories), as per technical specifications and as required.(For 5 Amp Power Point)	6	Point			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
2.04	Wiring for power plug with 2X4 sqmm PVC insulated, FRLS copper conductor, single core cable in recessed steel conduit (including supply & fixing of conduit with all accessories), along with 1.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing as per technical specifications & as required.					
	i) From MCB-Distribution Board to the Socket Outlets (For 15Amp Power Points & Computer Power Points or locations as shown in Drawings).	76	Point			
2.05	Wiring for power plug with 2X6 sq.mm. PVC insulated, FRLS copper conductor, single core cable in recessed Steel Conduit (including supply & fixing of conduit with all accessories), along with 1.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.(For Special Power Points in Floor & Wall, Industrial Socket & Pendent Power Point or as per details shown in working drawings)	6	Point			
2.06	Wiring for circuit wiring with following sizes PVC insulated, FRLS copper conductor, single core cable in recessed steel conduit (including supply & fixing of conduit with all accessories), along with 1.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing complete as required.					
	i) 2X2.5 Sqmm with 1 no. loop earth wire	1800	Metre			
2.07	Wiring for submain wiring with following sizes of PVC insulated, FRLS copper conductor single core cable in recessed steel conduit (including supply & fixing of conduit with all accessories), as required.					
	i) 4X10 Sqmm with 2 No. 6 SWG GI wire for earthing	500	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
ii)	4X16 Sqmm with 2 No. 6 SWG GI wire for earthing	1000	Metre			
iii)	4X25 Sqmm with 2 No. 6 SWG GI wire for earthing	400	Metre			
iv)	2X10 Sqmm with 1 No. 6 SWG GI wire for earthing.	210	Metre			
2.08	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing 5 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required.(5 Amp Power Point)	6	Each			
2.09	Supplying and fixing suitable modular metal box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch, base plate, modular cover plate, connections, etc. and all civil works complete as required.(15 Amp Power Point)	67	Each			
2.10	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 10 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For computer Points) on UPS.	9	Each			
2.11	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20Amp /32 Amp SP MCB in a sheet steel cover (or required approved colour shade) on surface or recess complete with all accessories including connections, testing and commissioning etc. complete as required.	6	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
2.12	Supplying, providing & fixing cordless Bell Push with musical bell, batteries etc of approved make complete as required.	6	Each			
2.13	Wiring in existing conduit: Supply & drawing of following sizes of PVC insulated FRLS copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required					
	i 1x1.5 sq. mm	1000	Metre			
	ii 2x2.5 sq. mm	100	Metre			
2.14	Supplying and fixing of following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required					
	i 5/6 amps switch	100	Each			
	ii 2 way 5/6 amps switch	3	Each			
	iii 15/16 amps switch	20	Each			
	iv 3 pin 5/6 amps socket outlet.	3	Each			
	v 6 pin 15/16 amps socket outlet.	20	Each			
	vi Telephone socket outlet	10	Each			
	vii TV antenna socket outlet	5	Each			
	viii 3 pin 5/6 amps switch socket combined	3	Each			
	ix 6 pin 15/16 amps switch socket combined	50	Each			
2.15	Supplying and fixing of stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	90	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
2.16	Supplying & fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc. as required.					
	i) 1 or 2 module (75mmx75mm)	50	Each			
	ii) 4 module (125mmx75mm)	100	Each			
	iii) 6 module (200mmx75mm)	110	Each			
	iv) 8 module (125mmx125mm)	150	Each			
	v) 12 module (200mmx150mm)	20	Each			
	TOTAL SUBHEAD 2.00					
3.00	SUB HEAD 3 :LIGHT FIXTURES AND FANS					
3.01	Supply, installation, fixing, mounting, testing & commissioning of following light fixture with electronic ballast, starter, capacitor, tubes/lamps, reflector, diffuser, MS body/housing holder wiring, connections, installation (mounting on ceiling with/ without down rods of required lengths or on false ceiling or on wall as required with all supports, nuts/ bolts etc), complete with all fixing accessories as required.					
	i) 2X28 watt box type fluorescent light fixture with reflector (Philips TMS 122M2XTL528 W EBT or approved equivalent) (236b)	8	Each			
	ii) 1X36watt fluorescent light surface mounted with acrylic cover (Philips TCS 19/136 HPF or approved equivalent)	26	Each			
	iii) 1X36watt Box Type fluorescent light (Philips TMC 55/136 HF or approved equivalent)136bw	6	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
	2 X36watt surface mounted flourescent light fixture (Philips TCS 306 2XTL5 28W EBP or approved equivalent) iv) 236SMO/236SMO2	82	Each			
	2X36watt recess mounted mirror optic fluoresent light (Philips TBS 8692XTL528W EBP D8 or approved equivalent)236rm1	34	Each			
3.02	Supply, installation, fixing, mounting, testing & commissioning of following compact fluoresent light fixture on surface/ recess/wall, with electronic ballast, lamps, reflector, diffuser, MS body/housing holder, installation (mounting on ceiling with/ without down rods/ on false ceiling or on wall with all supports, nuts/ bolts etc as required) etc. complete with all fixing accessories as required.					
	2X11 Watt CFL Mirror top light (Decon 62YV-Tornado or approved equivalent)	33	Each			
	2X18 watt, recessed compact flourescent light (Philips FBH145 M2XPLC/4P18W EBW 240V or approved equivalent)218ct2	211	Each			
	2X11 watt surface mounted mirror optics (Philips FCS 31/211 or approved equivalent)	33	Each			
	4X TL5 14 watt surface mounted mirror optics compact flourscent light (Philips TPS 814 4XTL514W EBP D8 or approved equivalent)	29	Each			
	2X26 watt, recessed compact flourescent light (Philips FBH225 2XPLC/4P26W EBE or approved equivalent)	159	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
	vi) 1X9 Watt Foot light fixture for auditorium	149	Each			
	vii) 2X9 watt Luminaries with lamps and all accessories with decorative acrylic diffusers (Crompton TLJ29 of Crompton or equivalent of Phillips or GE)	66	Each			
	viii) Exit light of pendant mounted maintained type 'EXIT' LED light with inbuilt battery pack for one hour duration.(Crompton greaves EXL/S/1/SE/H/DD or approved equivalent)	12	Each			
3.03	Supply, installation testing & commissioning of following Recessed down lighters inclusive of transformers, lamps and all other accessories, body/housing holder, wiring, connections etc. complete with all fixing accessories as required.					
	i) 1x 12 V, 50W Halogen Dichroic adjustable Down Lighter with separate electronic transformer (PhillipsQBS 652 E-HF or approved equivalent)	31	Each			
3.04	Supply of following ceiling fans (Crompton Greaves "High Breeze" or approved equivalent) complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required					
	i) 1200 mm sweep	95	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
3.05	Supply of 450 mm sweep, crompton greaves model high flow 18" wall mounted fan complete with double ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	20	Each			
3.06	i) Supply. Installation, testing & commissioning of 900 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	12.00	Each			
	ii) Supply. Installation, testing & commissioning of 900 RPM, 380 mm (Crompton Greaves Heavy duty exhaust fan or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	4.00	Each			
	TOTAL SUBHEAD 3.00					
4.00	SUB HEAD 4: TELEPHONE SYSTEM					
4.01	Supply and fixing of following sizes of steel conduit alongwith the accessories in surface/recess including painting in case of surface conduit (including supply & fixing of conduits), or cutting the wall and making good the same in case of conduit as recessed required					
	i) 20 mm dia	180	Metre			
	ii) 25 mm dia	120	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
4.02	Wiring for telephone point with Supply & laying two pair 0.5 Sq. mm solid, annealed copper conductor insulated with high density polythlene. The insulated cores twisted to from pairs, helically wrapped with polyster tape, over all insulation of FR PVC, unarmoured telephone cable in MS conduit (including supply & recessed laying of M.S. conduit), including providing & fixing of two module modular metal box on recess with following pair cord outlet, connections etc. complete as required.This also includes conduiting, wiring from floor Tag blocks to individual telephone outlets.					
	i) 2 pair cord outlet (Jack Type)	10	Each			
4.03	Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.					
	i) 10 Pair	1	Each			
	ii) 20 Pair	1	Each			
4.04	Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels etc. complete as required.					
	i) 10 Pair	300	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
4.05	Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. complete as required.					
	i) 10 Pair	80	Metre			
4.06	Supply, installation, testing and commissioning of following telephone instruments as per technical specification and as required :					
	i) Digital feature phone (KTS)	8	Nos			
4.07	Telephone wiring in existing conduit :					
	Supplying and drawing following pair 0.5 sq.mm FR PVC insulated copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required.					
	i) 2 Pair	50	Metre			
	TOTAL SUBHEAD 4.00					
5.00	SUBHEAD 5 :FIRE DETECTION AND ALARM SYSTEM					
5.01	Supply and drawing of following sizes of PVC insulated FRLS copper conductor single core cable in surface/recessed MS conduit (including Supplying and fixing of MS Conduit) complete as required.					
	i) 2X1.5 sqmm	960	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
5.02	Supply, installation, testing and commissioning of the following types of addressable fire detection and alarm accessories as per technical specification & complete with connections etc. as required.					
	i) Optical type Smoke Detector	70	Each			
	ii) Heat Detector	4	Each			
	iii) Manual call point in MS enclosure	6	Each			
	iv) Fire Alarm Bell / Hooter of suitable range to cover the complete floor, in MS enclosure.	6	Each			
	v) Response indicator	15	Each			
5.03	Supply, Installation, testing and commissioning of 2 loop microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer to print the details complete as per technical specifications and requirement of Local Fire Authority and as required.	1	Set			
5.04	Supply testing and commissioning of isolator module as per specifications.	10	Set			
5.05	Supply, Installation, testing and commissioning of addressable control modules.	1	Each			
5.06	Supply, Installation, testing and commissioning of addressable monitor modules.	1	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
5.07	Supply, installation, testing and commissioning of 4 zone microprocessor based talkback master control panel with LCD display , inbuilt battery charger and battery space .The panel should have LCD and LED display for zone wise calling , & fabricated with 16 SWG sheet metal housing with red paint .	1	Each			
5.08	Supply, installation, testing and commissioning talkback unit with telephone handset in 16 SWG red body housing with locking protection.	6	Each			
5.09	Supplying, drawing, connecting, testing & commissioning of 4 core, 1.5 sq. mm ,1100 volts FRLS copper conductor with PVC armoured cable with steel brading for mechanical protection and over all shielded with aluminium myler tape complete as required.	100	Metre			
	TOTAL SUBHEAD 5.00					
6.00	SUBHEAD 6: CONDUITING FOR COMPUTER NETWORKING					
6.01	Supply and fixing of following sizes of steel conduit alongwith the accessories in surface/recess (including supply & fixing of conduit with all accessories) including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
	i) 20 mm dia	315	Metre			
	ii) 25 mm dia	180	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
6.02	Supplying and fixing 2 module modular metal box on surface or in recess with modular cover plate, blanking plates and all accessories complete as required	9	Each			
	TOTAL SUB HEAD - 6.00					
7.00	SUBHEAD 7: CONDUITING FOR TV OUTLETS					
7.01	Supply and fixing of following sizes of steel conduit alongwith the accessories in surface/recess including painting in case of surface conduit (including supply & fixing of conduit with all accessories), or cutting the wall and making good the same in case of recessed conduit as required					
i)	25 mm dia	100	Metre			
7.02	Supplying and fixing 2 module modular metal box on surface or in recess including providing and fixing 1 No., Coaxial TV Outlet, connections, etc complete as required	5	Each			
7.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and potected with PVC sheath in the existing surface/ recessed steel/ PVC coduit as required.	120	Metre			
	TOTAL SUB HEAD - 7.00					
8.00	SUBHEAD 8: CABLES					
	L.T. CABLES And BUS DUCTS					

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
8.01	Supply of following sizes of 1.1 kV grade multicore aluminium/ copper conductor PVC sheathed armoured cable as per relevant IS code including straight cable joints if required.					
i	2 Core, 16 sqmm (Al Conductor)	120	Metre			
ii	3.5 Core, 25 sqmm (Al Conductor)	50	Metre			
iii	3.5 Core, 35 sqmm (Al Conductor)	60	Metre			
iv	3.5 Core, 70sqmm (Al Conductor)	40	Metre			
v	3.5 Core, 240 sqmm (Al Conductor)	50	Metre			
8.02	Supplying and making end termination with brass compression gland and aluminum lugs for following size of PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1.1 kV grade complete as required.					
i	2 Core, 16 sqmm (Al Conductor)	15	Each			
ii	3.5 Core, 25 sqmm (Al Conductor)	8	Each			
iii	3.5 Core, 35 sqmm (Al Conductor)	8	Each			
iv	3.5 Core, 70sqmm (Al Conductor)	4	Each			
v	3.5 Core, 240 sqmm (Al Conductor)	6	Each			
8.03	Supplying & making cable route marker with cement concrete 1:2:4 (1 cement: 2 Coarse Sand: 4 Graded stone aggregate 20mm nominal size) of size 60cm x 60cm at the bottom and 50cm x 50 cm at the top with a thickness of 10 cm including inscription duly engraved as required.	35	Set			
	L.T. CABLE LAYING					
8.04	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. complete as required					

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
	i) Size not exceeding 25 sq.mm	34	Metre			
	ii) Size exceeding 25 sq.mm but not exceeding 120 sq.mm	20	Metre			
	iii) Size exceeding 120 sq.mm but not exceeding 300 sq.mm	10	Metre			
8.05	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in the existing RCC/Hume/Stoneware/Metal pipe as required					
	i) Size not exceeding 25 sq.mm	68	Metre			
	ii) Size exceeding 25 sq.mm but not exceeding 120 sq.mm	40	Metre			
	iii) Size exceeding 120 sq.mm but not exceeding 300 sq.mm	20	Metre			
8.06	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade on surface or on existing cable tray complete as required.					
	i) Size not exceeding 25 sq.mm	68	Metre			
	ii) Size exceeding 25 sq.mm but not exceeding 120 sq.mm	40	Metre			
	iii) Size exceeding 120 sq.mm but not exceeding 240 sq.mm	20	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
8.07	Fabricating and installing following sizes of perforated M.S. cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with MS suspenders and including painting etc. as required					
	i) 100mm width X 50mm depth X 1.6mm thickness	50	Metre			
	ii) 150mm width X 50mm depth X 1.6mm thickness	20	Metre			
8.08	Providing and fixing 6 SWG dia GI wire on surface or in recess for loop earthing alongwith the existing cable as required.	1900	Metre			
	TOTAL SUB HEAD - 8.00					
9.00	SUBHEAD 9: EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS					
9.01	Earthing with copper plate 600mmX600mmX3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	12	Set			
9.02	Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	22	Set			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
9.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	34	Set			
9.04	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	330	Metre			
9.05	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe or in recess for earth electrode as required.	264	Metre			
9.06	Supplying and laying 50mmX6mm copper strip at 0.5mm below ground level as strip earth electrode as required as required.	180	Metre			
9.07	Providing and fixing 50mmX6mm copper strip in 65 mm dia class B GI Pipe on surface/existing cable trench/RCC pipe for connections etc. as required.	240	Metre			
9.08	Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with collar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
	i) 150mm dia	90	Metre			
	ii) 300mm dia	25	Metre			
9.09	Providing and fixing M.V. danger notice plate of 200mmX150mm made of mild steel, atleast 2mm thick and vitreous enameled white on both sides and with inscription in signal red colour on front side as required.	14	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
9.10	Providing & fixing G.I. pipe complete with G.I. Fittings, clamps including trenching & refilling/ wall cutting & plastering, etc. (for cable entry) with all minor civil & mech. Works complete as required.					
	i) 50 mm dia nominal bore	70	Metre			
	TOTAL SUB HEAD - 9.00					
10.00	SUBHEAD 10 :LIGHTENING PROTECTION					
10.01	Earthing with GI earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required.	12	Set			
10.02	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	12	Set			
10.03	Providing and fixing of lightning conductor finial, made of 25mm. dia. 300mm., long GI tube, having single prong at top, with 85 mm. dia. 6 mm. thick GI base plate including holes etc. complete as required.	12	Each			
10.04	Providing and fixing GI tape 20mm X 3mm thick on parapet or surface of wall for lightning conductor as required. (For horizontal run).	250	Metre			
10.05	Providing and fixing GI tape 20mm X 3mm thick on parapet or surface of wall for lightning conductor as required. (For Vertical run).	180	Metre			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
10.06	Providing and fixing testing joint, made of 20mm X 3mm/32mmX6mm thick GI strip, 125 mm. long, with 4 no.'s of GI bolts, nuts, check nuts and spring washers etc. complete as required.	12	Each			
10.07	Providing and laying GI tape, 32 mm X 6 mm thick, from test joint upto earth electrode directly in ground as required.	120	Metre			
	TOTAL SUB HEAD - 10.00					
11.00	SUB HEAD 11 : STAGE LIGHTING					
	STAGE LIGHTING					
11.01	Supply, Installation, Testing and commissioning including MS structure for installation of fixture of 1000W 150mm double plano-convex lens profile spot light complete with T-11 or equiv. lamps, barn door, filter frame, C-clamp, 1.5M 3x2.5 sq.mm. copper cable, plug top etc. complete.	6	Each			
11.02	Supply, Installation, Testing and commissioning including MS structure for installation of fixture of 1000W Solar Fresnel spot light complete with all accessories and T-11 lamp or equiv. lamps with imported glass, side/bottom sliding knob, 1.5M 3x2.5 sq.mm. copper cable, plug top etc. as required.	6	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
11.03	Supply, Installation, Testing and commissioning including MS structure for installation of fixture of 1000W Flood light complete with 1000W 189mm halogen tube and other accessories and 1.5 m. 3x2.5 sq.mm. copper cable, plug top, etc. weather proof complete.	6	Each			
11.04	Providing and fixing 3 Section telescopic stands made of steel tube for stage lighting mentioned above.	2	Each			
11.05	Supply, installation, testing and commissioning of Electronic Type Dimmer Panel with Suitable Number of circuits for controlling Compact Flourscent Lights in Auditorium duly wired with terminal strip etc with centralised knob for complete control, and five station seperate control with suitable MCB at incomer, fuse, complete with incoming cable For controlling Auditorium Hall Lights . This includes connection between control consloe and dimmer through suitable PVC copper conductor as required & its connection, connecting the existing light circuits in outgoing of the panel complete as required.	1	Set			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
11.06	Supplying, installation, connection & commissioning of Electronic type dimmer console panel with 12 dimmers of 2.5KW each in wall mounting, sheet steel housing with 12 nos. patch panel. There shall be two plug sockets for each dimmer for controlling stage light and eight plug socket for each dimmer controlling 1000 watts spot lights . This will include connection between control console and dimmer through suitable PVC copper conductor as required including light control desk suitable for controlling the intensity of 12 channels with 2-scene preset arrangement, group & master faders, Cross Fade, flasher, chaser Music on selected channels complete as per specifications and as directed for proper functioning of the system .	1	Set			
	TOTAL SUB HEAD - 11.00 STAGE LIGHTING					
12.00	SUB HEAD : 12 STAGE CURTAIN					
	Stage Curtain					
12.01	Main curtain made out of velvet curtain cloth with horizontal sliding arrangement complete with fixing rails, brackets, sliding arrangement and motorised operation complete with runners, master runners, pullies, 3mm steel wire rope, motor of required capacity with 2 Nos. air breaker contactors, 2 nos. micro switches for auto stop, 3 nos. push buttons for forward, reverse and stop positions. The curtain should be draped to half area when in closed position. Min. overlap at centre should be 900mm and should be stitched in double gathering.	1.00	Set			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
12.02	Providing and fixing cloth wings made out of black glazed cotton cloth fixed on 6mm thick commercial plywood fixed on one side of MS 50x25x16G pipe welded frame work. The pipe framework shall be made out of 25x50mm pipe fixed at 900mm c/c with overhead pivot track complete with duly painted framework.	1.00	Set			
12.03	Providing and fixing average frills made out of double gathering glazed cotton fabric to be installed above stage with 25mm dia. GI pipe.	2.00	Set			
	TOTAL SUBHEAD 12:					
	SUB HEAD : 13 VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM					
13.00	Video Projection System					

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
13.01	Design, supply, installation, testing & commissioning of video projection system complete with LCD technology with native resolution of 1920x1080 pixels, 9000 ANSI lumens projector long throw projection lens, complete, 22 feet x 16 feet motorized screen, DVD player, RGB Video data switcher, 7 inputs, 1 output with matrix & scaler including wiring for the entire system in rigid PVC/ MS conduits.	1	Lot			
	PA SYSTEM OF AUDITORIUM :					
13.02	Supplying, Installation testing and commissioning of the complete PA system for auditorium. This should include the supply, installation, testing and commissioning of the following items and any other item required for complete functioning of the system including wiring of the same.					
	a. Floor podium Mic phone with stand.					
	b. Suspended Mic					
	c. Collar Mic					
	Supplying, installation, testing and commissioning of dual channel power Amplifier according to the capacity of the					
	d. auditorium.					
	e. PA audio mixer.					
	f. Audio Cassette Player required for smooth operation.					
	5 CD Changer required for smooth operation etc. or any					
	g. other item.	1	Lot			
	TOTAL SUBHEAD 13: VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM as mentioned above.					
14.00	SUBHEAD 14 :SECURITY SYSTEM :(CCTV)					

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
14.01	Supply and fixing of following size of ISI marked MS conduit along with the accessories in surface/ recess including painting in case of surface conduit or cutting the wall and making good the same in case of recessed conduit as required.					
	i) 20 mm dia	500	Metre			
	ii) 25 mm dia	200	Metre			
14.02	Cabling with 2x1.5 sq. mm PVC insulated copper conductor cable in the existing MS conduit for power supply to the camera.	400	Metre			
14.03	Supply and drawing coaxial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface / recessed steel conduit as required.	800	Metre			
14.04	A CAMERAS :					
	Supply, installation, testing and commissioning of indoor 520 TVL high resolution, day/night, weatherproof dome type, 1/3-inch Sony CCD imager colour Day Night camera with varifocal lens, 3.6-8mm including Connectors, Lens, camera Mounts. Power Supply and all ancillary equipment required for the proper functioning of the camera complete as per technical specifications and as required of					
	i) approved makes.	2	Each			

Item No	Description Of Item	Qty	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
	Supply, installation, testing and commissioning of indoor 520 TVL high resolution, dome type, 1/3-inch Sony CCD imager colour with varifocal lens, 3.6-8mm including Connectors, Lens, camera Mounts. Power Supply and all ancillary equipment required for the proper functioning of the camera. complete as per technical specifications and as required of approved makes.	10	Each			
B.	DVR					
	Supply, installation, testing and commissioning of 16 channel real time, 400 fps, embedded Digital Video Recorder (DVR) with 2 video outputs and facility to record multiple camera signles while simultaneously providing live multi-screen viewing, recording, play back, remote viewing and archiving of recorded data. DVR having capacity of 2 TB HDD storage capacity. DVR will do real time recording at CIF resolution & H.264 compresssion. DVR will be embedded IP based web enabled DVRs. DVR racks and any other item required in the commissiong is in the scope of supply complete as per technical specifications i) and as required of approved makes.	1	Each			
C.	Monitor					
	Supply, installation, testing and commissioning of 32" CCTV colour LCD flat screen monitor including all accessoriess of approved makes.	1	Each			
	TOTAL SUBHEAD 14 : CCTV					
	TOTAL FOR ELECTRICAL WORKS					

SUMMARY OF COST ESTIMATE FOR ELECTRICAL WORKS .

S.No.	DESCRIPTION	Amount Figure (In Rs.)	In	Amount in Words (Rs.)
1	SUB HEAD 1: PANELS & DISTRIBUTION BOARDS			
2	SUB HEAD 2 : WIRING			
3	SUB HEAD 3 :LIGHT FIXTURES AND FANS			
4	SUB HEAD 4: TELEPHONE SYSTEM			
5	SUBHEAD 5 :FIRE DETECTION AND ALARM SYSTEM			
6	SUBHEAD 6:CONDUITING FOR COMPUTER NETWORKING			
7	SUBHEAD 7:CONDUITING FOR TV OUTLETS			
8	SUBHEAD 8 CABLES			
9	SUBHEAD 9: EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS			
10	SUBHEAD 10 :LIGHTENING PROTECTION			
11	SUB HEAD 11 : STAGE LIGHTING			
12	SUB HEAD : 12 STAGE CURTAIN			
13	SUB HEAD : 13 VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM			
14	SUBHEAD 14:SECURITY SYSTEM :(CCTV)			
	GRAND TOTAL FOR ALL ELECTRICAL WORKS			

BILL OF QUANTITIES

OF

HVAC WORKS

Providing and fixing Acoustics work, False Ceiling, auditorium chairs and other associated works in Auditorium of Academic block at Kolkata Medical College, kolkata (W.B.) under PMSSY".(Package – I)

HVAC WORKS							
Item No	Ref. No.	Description Of Item	Quantity	Unit	Rate in Figures (Rs)	Rate in Words (in Rs)	Amount in Figures(in Rs)
1	1A	2	3	4	5	6	7
1.00		GRILLES					
1.01		Supply, Installation, testing and balancing fo supply/return air grilles, with/without volume control dampers of powder coated aluminum construction suitable for installation in walls , false ceiling boxing etc. as per specification and drawings					
i	NS	Supply air grillers in single louvers with volume control dampers	10	Sqm.			
ii	NS	Return air grilles in single louver with volume control damper	10	Sqm.			
		TOTAL					

**SUMMARY SHEET FOR PROVIDING AND FIXING ACOUSTICS WORK,
FALSE CEILING, AUDITORIUM CHAIRS AND OTHER ASSOCIATED
WORKS IN AUDITORIUM OF ACADEMIC BLOCK AT KOLKATA
MEDICAL COLLEGE, KOLKATA (W.B.) UNDER PMSSY”.(PACKAGE – I).**

S.No	Name of Head	Total Quoted Amount (In Indian Rupees)
1	Civil Works	
2	Electrical works	
3	HVAC Works	
	Total in Figures	
	Total in Words	

END OF
VOLUME-V