

**LADY HARDINGE MEDICAL COLLEGE & ASSOCIATED  
HOSPITALS, NEW DELHI**

**GOVERNMENT OF INDIA**

**TENDER**

**FOR**

**Construction of Hospital Buildings, Academic Block &  
Student's Hostel with Associated Services Under Phase-1 for  
Comprehensive Redevelopment Plan for Lady Hardinge Medical  
College & Associated Hospitals, New Delhi**

**VOLUME – V**

**BILL OF QUANTITIES**

**Civil Works & services**

**Electrical works**

**HVAC Works**

**JANUARY' 2011**



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**Tender No HSCC/168/PM/LHMC/RESIDENTIAL/2011**

**Construction of Hospital Building, Academic Block & Students Hostel with associated Services Under Comprehensive redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals, New Delhi**

**Bill of Quantities CIVIL & RCC**

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>1</b>	<b>2</b>	<b>4</b>	<b>18</b>			
<b>1</b>	<b>EARTH WORK</b>					
1.01	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m, disposed earth to be levelled and neatly dressed.. Obtaining necessary statutory approvals / permissions viz drainage approval, royalty permission, debris management plan for excavation shall form part of excavation contractor's scope of work. During excavation all related records, levels shall be maintained by the contractor. All safety norms & regulation shall be strictly followed. General house keeping and surrounding area shall be kept neat and clean on a regular basis.					
a)	All kinds of soil	Cu.m		186773.00		
b)	Ordinary rock	Cu.m		1074.00		
c)	Hard rock (blasting prohibited)	Cu.m		256.00		
1.02	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5m to 3.0m	Cu.m		44347.00		
ii)	3.0m to 4.50m	Cu.m		30562.00		
iii)	4.5m to 6.0m	Cu.m		26523.00		
iv)	6.0m to 7.50m	Cu.m		26075.00		
v)	7.50m to 9.00m	Cu.m		11780.00		
vi)	9.00m to 10.50m	Cu.m		960.00		
1.03	Extra for every additional lift of 1.5 m or part there of in.					
a)	Ordinary or hard rock					
i)	Lift from 1.5 to 3.0m	Cu.m		141.00		
ii)	Lift from 3.0 to 4.5m	Cu.m		167.00		
iii)	Lift from 4.50m to 6.0	Cu.m		135.00		
iv)	Lift from 6.00 to 7.50m	Cu.m		155.00		
v)	Lift from 7.50m to 9.0	Cu.m		165.00		
vi)	Lift from 9.00m to 10.50m	Cu.m		180.00		
1.04	Transportation & disposal of excavated earth, rock, debris, muck at an approved location and as per local norms, with necessary statutory approvals & in consultation with Engineer Incharge.	Cu.m		178345.00		
1.05	Transportation of disposal of excavated earth beyond 50 m or part thereof beyond 1st 50m upto 9 such additional leads	Cu.m		37355.00		
1.06	Transportation of disposal of excavated rock beyond 50 m or part thereof beyond 1st 50m upto 9 such additional leads	Cu.m		217.00		
1.07	Close timbering over areas including strutting, shoring & packing, cavities(wherever required) etc complete (measurements to be taken of the face area timbered):					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
a	Depth not exceeding 1.50 m	Sq.m	2561.00			
b	Depth exceeding 1.50 m but not exceeding 3.0 m	Sq.m	4223.00			
c	Depth exceeding 3.00 m but not exceeding 4.5 m	Sq.m	2367.00			
d	Depth exceeding 4.50 m but not exceeding 6.0 m	Sq.m	1789.00			
e	Depth exceeding 6.00 m but not exceeding 7.50 m	Sq.m	1695.00			
f	Depth exceeding 7.50 m but not exceeding 9.00 m	Sq.m	1081.00			
g	Depth exceeding 9.00 m but not exceeding 10.50 m	Sq.m	203.00			
1.08	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	Cu.m	10763.00			
1.09	Supplying & stacking of good earth at site including royalty, necessary approvals if required and carriage etc complete.(earth measured in stacks will be reduced by 20% for payment)	Cu.m	39344.00			
1.10	Supplying and filling in plinth with river sand under floors including, watering, ramming consolidating and dressing complete.150mm thk	Cu.m	6258.00			
1.11	Supplying, Diluting & Injecting chemical emulsion for <b>pre-constructional anti termite treatment</b> & creating a continuous chemical barrier under & all round the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall & floor, along the external perimeter of building, expansion joints, over the top surface of consolidated soil on which apron is to be laid, surroundings of pipes & conduits etc. complete with Chloropyriphos Emulsifiable Concentrate of 20 % with 1 % concentration. (Plinth Area of Building shall be measured in Sq.m for payment)	Sq.m	10826.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>2.00</b>	<b>CONCRETE WORKS</b>					
2.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level.					
a)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.m	4955.00			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	Cu.m	210.00			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	Cu.m	135.00			
2.02	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc. up to floor five level, excluding the cost of centering, shuttering and finishing :					
a)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.m	149.00			
2.03	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size).	Sq.M	564.00			
2.04	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	per 50 kg cement	330.00			
2.05	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	Sq.M	564.00			
2.06	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6graded stone aggregate 20mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	Sq.M	3484.00			
2.07	Providing & Laying CC topping of mix M25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid & finished with screed board vibrator, vacume dewatering process & finally finished by floating, brooming with wire brush etc. complete as per specifications & directions of Engineer-n- charge. (The panel shuttering work shall be paid for separately.)	Cu.m	2067.00			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>3.00</b>	<b>REINFORCED CEMENT CONCRETE</b>					
3.01	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering,shuttering, finishing & reinforcement. All work upto plinth protection. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.m	791.00			
3.02	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	Sq.m	4085.00			
b)	Walls (any thickness) including attached pilasters, buttersesses, plinth and string courses etc.	Sq.m	66390.00			
c)	Weather shade, Chajjas, corbels etc., including edges.	Sq.m	11443.00			
d)	Suspended floors, roofs, landings, balconies and access platform with waterproof ply 12 mm thick.	Sq.m	137398.00			
e)	Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12mm thick.	Sq.m	83640.00			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	Sq.m	66261.00			
g)	staircases (including landing).	Sq.m	7557.00			
h)	Lintels, beams, plinth beams, girders, bressumers and cantilevers	Sq.m	465.00			
i)	Columns, Pillars, Piers, Abutments, Posts and Struts.	Sq.m	465.00			
ii)	Suspended floors, roofs, landings, balconies and access platform	Sq.m	245.00			
iii)	Weather shade, Chajjas, corbels etc., including edges.	Sq.m	245.00			
i)	Small lintels not exceeding 1.5m clear span. moulding as in cornices, window sills, string courses, bands, copings, bed plates. anchor blocks and the like.	Sq.m	490.00			
3.03	Providing and laying expansion strip , 1.2 m wide at specified locations in the retaining wall & slabs as shown & methodology / work sequence as mentioned on the drawing including application of an bonding agent (for bonding of old & new concrete) as per manufacturers specification.	Sq.m	7990.00			
3.04	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of decshuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					
a)	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	Sq.m	135937.00			
3.05	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits.					
a)	50 mm thick	Sq.M	348.00			
3.06	Reinforcement for R.C.C. work including straightening. cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars / Fe 500	kilogram	13192015.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
3.07	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 410 kg of cement per cum of concrete. All work up to floor V level.	Cu.m	86712.00			
3.08	Add or deduct for providing richer or leaner mixes respectively at all floor levels.					
a)	Providing M-30 grade concrete by using 420 kg of cement per cum of concrete instead of M-25 grade B.M.C. / R.M.C.	Cu.m	74540.00			
b)	Providing M-40 grade concrete by using 435 kg of cement per cum of concrete instead of M-25 grade B.M.C. / R.M.C.	Cu.m	12126.00			
3.09	Deduct for using less cement than the quantity as provided in the item of RMC/batch mix concrete as arrived as per mix design.	Quintal	3693.00			
3.10	Providing and laying in position ready mixed concrete manufactured in fully automatic batching plant & transported to site of work in transit mixer for a lead upto 10 kms, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of RMC from transit mixer to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 410 kg. of cement per cum of concrete. All work upto floor V level.	Cu.m	415.00			
3.11	Extra for R.C.C. / B.M.C / RM.C. work above floor V level for each four floors or part thereof.	Cu.m	13356.00			
3.12	<b>Structural steel</b> work riveted, bolted or welded in built up sections, trusses & framed work, including cutting, hoisting, fixing in position & applying a priming coat of approved steel primer all complete.(Truss for Skylight)	kg	19000.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>4.00</b>	<b>BRICK WORK</b>					
4.01	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cu.M	434.00			
4.02	Brick work with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level in all shapes and sizes in :					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cu.M	21975.00			
b)	Extra for brick work in superstructure above floor V level for each four floors or part thereof by mechanical means by lifting material using mobile crane.	Cu.M	4569.00			
4.03	Half brick masonry with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level.					
a)	Cement mortar 1:4 (1 cement :4 coarse sand)	Sq.M	11085.00			
b)	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means by lifting material using mobile crane.	Sq.M	672.00			
4.04	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks).	Sq.M	74996.00			
4.05	Providing and laying autoclaved aerated cement blocks masonry with 100mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand ) The rate includes providing and placing in position 2 Nos. 6 mm dia M.S. bars at every third course of masonry work.	Cu.m	63911.00			
4.06	Extra for AAC block masonry in superstructure above floor V level for every four floors or part there of.	Cu.m	17161.00			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>5.00</b>	<b>MISCELLANEOUS STONE WORK</b>					
5.01	Stone work, plain in copings, cornices, string courses and plinth courses, upto 75 mm thick in Cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.					
a)	Red sand stone	Cu.M	22.00			
	<b>SUB TOTAL</b>					
<b>6.00</b>	<b>MARBLE WORK</b>					
6.01	Marble work gang saw cut (polished and machine cut) of thickness 18mm for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the marble shade: (To be secured to the backing by means of cramps, which shall be paid for separately) The rate of marble will not be dependent on the Pattern.					
a)	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble					
b)	Area of slab upto 0.50 sqm	Sq.M	4096.00			
6.02	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups,including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.					
a)	Granite of any colour and shade					
i)	Area of slab over 0.50 sqm.	Sq.M	876.00			
6.03	Extra for providing edge moulding to 18mm thick marble stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
a)	Granite work.	Metre	1110.00			
6.04	Extra for fixing marble /granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete.					
		Metre	1090.00			
6.05	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.					
		Nos	590.00			
6.06	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.					
		Sq.M	572.00			
	<b>SUB TOTAL</b>					



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>7.00</b>	<b>DOORS AND WINDOWS</b>					
7.01	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position :					
a)	Second class teak wood	Cu.M	5.00			
7.02	Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes including black enamelled ISI marked M.S butt hinges with necessary screws.					
a)	Second class teak wood					
i)	35 mm thick	Sq.M	644.00			
7.03	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	Sq.M	351.00			
7.04	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters :					
a)	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	Sq.M	9050.00			
b)	25mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws.	Sq.M	396.00			
7.05	Extra for Providing and fixing flush doors with decorative veneering					
a)	On one side in item no. 9.21	Sq.M	9693.00			
7.06	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of shutters (over all area of door shutter to be measured) Over item no. 9.20 and 9.21.	Sq.M	9693.00			
7.07	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured) :					
a)	Rectangular or square.	Sq.M	813.00			
7.08	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured).					
a)	Decorative type door.	Sq.M	298.00			
7.09	Providing and fixing 35mm thick wire gauze shutters using galvanised M.S. wire gauze of average width of aperture 1.4mm with wire of dia. 0.63 mm for doors, windows and clerestory windows including ISI marked bright finished or/and black enamelled M.S. butt hinges with necessary screws :					
a)	Second class teak wood.	Sq.M	5491.00			
7.10	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete :					
a)	2nd class teak wood					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
i)	50x12 mm	Metre	30115.00			
7.11	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. all complete.					
a)	Fixed to openings /wooden frames with rawl plugs screws etc.	Kg	175964.00			
7.12	Providing and fixing fly proof galvanised M.S. wire gauze to windows and clerestory windows using galvanised M.S. wire gage with average width of aperture 1.4 mm in both directions with wire of dia. 0.63 mm.					
a)	With 12 mm mild steel U beading.	Sq.M	22197.00			
7.13	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embeddings in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size)	Nos	26850.00			
7.14	Providing and fixing oxidised M.S. Safety chain with necessary fixtures for doors. (Weighting not less than 450 gms.)	Nos	3432.00			
7.15	Providing and fixing fibre Glass Reinforced plastic (FRP) Door Frames of cross-section 90mm x 45mm having single rebate of 32mm x 15mm to receive shutter of 30mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat .Doorframe laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiberglass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	Metre	5850.00			
7.16	Providing and fixing to existing door frames.					
a)	30 mm thick Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5mm thick FRP laminate for panels conforming to IS: 14856 - 2000 including fixing to frames.	Sq.M	1728.00			
7.17	Providing and fixing 12mm thick panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25mm to 40mm thick.					
a)	Fire retardant plywood conforming to IS: 5509.	Sq.M	1153.00			
7.18	Providing and fixing 12mm thick prelaminated particle board (Exterior Grade) flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions ofengineer-in-charge.					
(a)	Pre-laminated particle board with decorative lamination on both sides.	SqM	8944.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
7.19	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, for 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 with slide plate etc. complete as per the direction of Engineer-in-charge.					
(a)	With stainless steel cover plate	Nos	1865.00			
7.20	Providing and Fixing Lead Lined door of size 1.5 X 2.4 meter with 6mm thick lead sheath, 19 mm commercial block board on front and back, Laminate of approved make on front and back with 50 mm X 6 mm beading BCT patty complete in all respects as directed by The Engineer in charge	Nos	19.00			
7.21	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, 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 snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately) :					
a)	For fixed portion					
i)	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	Kg	27679.00			
7.22	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).					
a)	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	Kg	32102.00			
7.23	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):					
a)	With float glass panes of 5.50 mm thickness	Sq.M	11658.00			
7.24	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.					
a)	Upto 5mm depth and 5 mm width	Metre	28605.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
7.25	Design, supply, fabrication & erection of approved structural glazing using specially designed Vertical Mullion & Horizontal Transoms of Required size & as per approved Grid work with aluminium rectangular sections to be fixed in masonry at interval of each floor on concrete slab with 80 mm x 100 mm x 5mm thick galvanized M & L angle fixed on wall side with raw bolt size of 10 mm x 90 mm with necessary bolts & washers / nuts for the plumb the line levels. the glass panel's shall be fixed on a specially designed sub- frame using Dow Corning 995 strural sealant & GE Silicon (SSG - 4000) sub frame would be fixed on main frame grid in a manner that no aluminium frame is visible from outside & grooves between the glass panel shall be filled with weather sealant of Dow corning 789 / GE Sil proof to made it air tight, water proof & dust free thus giving it a flush look outside. Glass will be of 6 mm thick Glaverbel reflective type with heat strengthened toughened in Blue colour. All works to be carried as direct	Sq.M	626.00			
7.26	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators a with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS : 1285 fixed with rawl plugs and stainless steel screws etc.	Kg	18221.00			
7.27	Providing and fixing heavy duty locks in pair of approved make for Alluminium sliding windows in approved colour anodized aluminium sections with necessary cutouts at appropriate locations and fastenings etc. complete as per the instructions of Engineer-in-charge of 150 mm long size.	Nos	9644.00			
7.28	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete :					
a)	250x16 mm	Nos	4487.00			
7.29	Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade with necessary screws etc. complete :					
a)	250x10mm	Each	3432.00			
b)	100x10mm	Nos	1860.00			
7.30	Providing and fixing aluminium handles ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete :					
a)	125 mm	Nos	6868.00			
b)	100 mm	Nos	2082.00			
7.31	Providing and fixing aluminium hanging floor door stopper ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete					
a)	Twin rubber stopper	Nos	4475.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
7.32	Providing and fixing aluminium casement stays ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete.	Nos	4822.00			
7.33	Providing and fixing bright finished brass 100 mm mortice latch and lock ISI marked with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles with necessary screws etc. complete (Best make of approved quality).	Nos	3432.00			
7.34	Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade with necessary screws etc. complete :					
(a)	Tower Bolts 150 mm	Nos	1553.00			
7.35	Providing and fixing IS : 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete.	Nos	1865.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>8.00</b>	<b>STEEL WORK</b>					
8.01	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade No.2 and M.S. top cover of required thickness for rolling shutters.					
a)	80x1.25mm M.S. laths with 1.25 mm thick top cover.	Sq.M	309.00			
8.02	Providing and fixing ball bearing for rolling shutters	SqM	30.00			
8.03	Extra for providing grided rolling shutters manufactured out of 8 mm dia. M.S. bar instead of laths as per design approved by Engineer-in-charge.	SqM	309.00			
8.04	Providing and fixing pressed steel door frames confirming to IS: 4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strikeplate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:					
a)	Profile B	M	29373.00			
b)	Profile C	M	700.00			
8.05	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					
a)	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	Kg	1451.00			
8.06	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rail of T-iron 40x40x6mm with 40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	Sq.M	8.00			
8.07	Providing & fixing of 50mm dia. of SS 304 grade, 18 gauge, pipe section for Hand railing fitted with SS bracket of 25mm dia. Pipe of 18 gauge (ballasts) & 600mm c/c fitted on SS tapered plate, shoe with SS screws and necessary buffing etc complete and as per detailed drawing and as directed by Engineer in charge.	Metre	3239.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
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8.08	Providing & fixing of 300mm (150 + 150mm) of SS 304 grade, 16 gauge, tapered edged L angle ( Having angle 90 & 135 deg.) section for corner gaurds fitted with SS Screws and necessary buffing etc complete and as per detailed drawing and as directed by Engineer in charge.	Metre	2486.00			
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**SUB TOTAL**

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>9.00</b>	<b>FLOORING</b>					
9.01	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.					
a)	40mm thick with 20mm nominal size stone aggregate.	Sq.M	1004.00			
9.02	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).					
a)	Dark shade using ordinary cement.	SqM	2515.00			
9.03	Marble stone flooring with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete. (No extra payment for flooring pattern).					
a)	Raj Nagar plain.	Sq.M	422.00			
9.04	Marble stone flooring (basic rate Rs. 294.00 per sqm) with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete (No extra payment for flooring pattern).					
a)	Agaria White	Sq.M	3321.00			
9.05	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : (No extra payment for flooring pattern).					
a)	25 mm thick.	Sq.M	13200.00			
9.06	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.					
		Sq.M	864.00			
9.07	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.					
		Metre	6260.00			
9.08	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre .					
		Metre	9034.00			



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
9.09	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete. (No extra payment for flooring pattern).	Sq.M	75880.00			
9.10	Providing and laying rectified Glazed Ceramic / antiskid floor tiles 300x300 mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand) including pointing the joints with white cement and matching pigments etc., complete. (No extra payment for flooring pattern).	Sq.M	5948.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
9.11	Providing and laying vitrified tiles in flooring / skirting different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. (No extra payment for flooring pattern).					
a)	Size of Tile 60x60 cm	Sq.M	49774.00			
9.12	Providing and fixing approved heavy duty homogeneous, flexible vinyl flooring of approved colour and make having minimum 2 mm thickness in roll form over IPS flooring by applying approved and manufacturer specified adhesive and all joints to be sealed by PVC soldering by using PVC soldering rods as per manufacturer's specification etc complete and as directed by The Engineer in charge. (Note : Minimum roll width 1.5 mtrs. and minimum weight 90 kg per 30 sqmt. of PVC roll. IPS to be paid separately). (No extra payment for flooring pattern).	Sq.M	2707.00			
9.13	Providing and laying granite stone 20 mm thick in required shade, set in 1:4 (1 cement : 4 coarse sand) with cement float and with cement pointing laid to proper slope if required finished and cleaned of all strains complete in flooring in approved pattern, set in average 30 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) & filling the joint with white/ colour cement & including cleaning etc complete as directed by The Engineer in charge. (No extra payment for flooring pattern).	Sq.M	13283.00			
9.14	Providing and fixing lead lining flooring with 1mm sheath inclusive all material and labour complete	Sq.M	321.00			
9.15	Providing and Fixing athletic rubber flooring over levelled IPS flooring. The athletic rubber flooring shall consist of laying 25 to 30 mm thick interlocking tiles in required pattern, colour & make, stuck over IPS flooring with appropriate adhesive, including necessary trimming the edges of tiles below skirting etc. complete and as per the instructions of the Engineer in Charge. (Note : IPS to be paid separately)	Sq.M	113.00			
9.16	Providing and laying pre polished granite stone slab of any required size, in skirting / dado and of approved colour having 18 to 20 mm thickness backed with 12 mm thick neat cement paste, & filling the joints with white / colour cement including cleaning etc. complete as directed by The Engineer in charge. (Extra for approved moulding on exposed edges)	Sq.M	350.00			
9.17	Providing & Laying of Tremix concrete flooring with vacuum dewatering by means of machine roughening, in alternate patches keeping 10mm expansion joint & filling with flexible material like (thermacol, shalitek board, etc). Scrubbing the concrete surface with appropriate scrubber as directed by Engg-in-charge, & curing etc. complete.	SqM	25556.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
9.18	Providing & Laying aci & alkali resistant flooring by using tiles specially made of Resisting Acids and alkali, of specified design for specialized area as specified in the dwgs etc. complete.set in average 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) & including cleaning etc complete as directed by The Engineer in charge.	SqM	300.00			
9.19	Providing and laying of approved make Epoxy ceramic aggregate mixed abrasion resistance flooring over IPS flooring. Epoxy flooring to be laid over Epoxy primer coat applied on levelled IPS floor. The flooring thickness will be minimum 2 mm and will be self levelling type of approved colour and prepared, mixed in ratio & laid as per specification of approved make complete as per the instruction of The Engineer in charge. (Note : IPS to be paid separately). (No extra payment for flooring pattern).	SqM	1042.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
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**10.00 FALSE CEILING**

10.01 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 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- Pa Sq.M 25335.00

10.02 Providing and fixing at all height perforated 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.

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	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 specification and direction of the Engineer in Charge but excluding the cost of painting with :	Sq.M	34904.00			
10.03	P/F glass wool having density 40 Kg/m3 or more to be placed above perforated false ceiling with all inclusive as directed by Engineer in charge	Sq.M	34904.00			
10.04	P/F Luxalon 600 x 600 UN Perforated Aluminium Plain Metal ceiling system 0.7 mm Aluminium Plain. Manufactured by HUNTER DOUGLOUS fixed with aluminium angle framing with all necessary hardware & scaffolding etc. complete.	Sq.M	3536.00			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>11.00</b>	<b>FINISHING</b>					
11.01	12 mm cement plaster of mix :					
a)	1:6 (1 cement: 6 coarse sand)	Sq.M	100932.00			
11.02	15 mm cement plaster on rough side of single or half brick wall of mix :					
a)	1:6 (1 cement: 6 coarse sand)	Sq.M	78269.00			
11.03	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement: 5 coarse sand) and a top layer 6mm thick cement plaster 1:3 (1 cement: 3 coarse sand) finished rough with sponge.	Sq.M	53739.00			
11.04	6 mm cement plaster of mix :					
a)	1:3 (1 cement: 3 fine sand)	Sq.M	59400.00			
11.05	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	Sq.M	15476.00			
11.06	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	Sq.M	219989.00			
11.07	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade					
a)	New work (two or more coats) over and including priming coat with cement primer.	Sq.M	60897.00			
11.08	Applying one coat of cement primer of approved brand and manufacture on wall surface :					
a)	Cement primer.	Sq.M	160665.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
11.09	Finishing walls with textured exterior paint of required shade :					
a)	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.	Sq.M	52161.00			
11.10	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					
a)	Two or more coats on new work	Sq.M	160665.00			
11.11	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:					
a)	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	Sq.M	20644.00			
11.12	French spirit polishing :					
a)	Two or more coats on new works including a coat of wood filler.	Sq.M	9693.00			
11.13	Providing and Applying Anti Bacterial paint on walls as per specifications and as directed by the Engineer in charge	Sq.M	8752.00			
11.14	The system fixed to brick wall at 900mm center high from finish floor level comprising continuous aluminium rail retainer, adjustable rail mounting base, with impact absorbing strip, end cap & high impact vinyl acrylic snap-on textured surface cover. 140mm hight x 80mm thickness.	Metre	7452.00			
11.15	Providing and making 150 mm wide coving at the junction of the walls and flooring by approved colour & make epoxy mortar applied over one coat of epoxy primer and finishing the coving with 2 coats epoxy paint over epoxy putty etc complete as per approved manufacturers specification and as directed by The Engineer in charge	Metre	657.00			
11.16	Providing and making 150 mm wide coving at the junction of the walls and flooring by approved colour & make Vinyl applied over coat of Adhesive and finishing the coving complete as per specification, and as directed by The Engineer in charge	Metre	1491.00			
11.17	Providing and making coving in plaster, 50 mm wide, 50 mm in height, in cement mortar 1:3 (1 cement : 3 coarse sand)at the junction of the walls and flooring and finishing the coving with etc complete as per specifications and as directed by the Engineer in charge	Metre	7452.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>12.00</b>	<b>ROAD WORK</b>					
12.01	Earth work in surface excavation <b>not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan</b> including disposal of excavated earth Upto 50 m and lift Upto 1.5 m, disposed soil to be leveled and neatly dressed :					
a)	All kinds of soil	100 sqm	246.00			
12.02	Providing, hoisting and fixing <b>up to floor five level precast reinforced cement concrete in vertical and horizontal fins indially or forming box, louvers</b> , setting in cement mortar 1 : 2 ( 1 Cement : 2 crushed sand ) including the cost of required centering, shuttering and finishing a smooth with 6 mm thick cement plaster 1 : 3 ( 1 Cement : 3 Fine Sand ) on exposed surface complete but excluding the cost of reinforcement with 1 : 2 : 4 ( 1 Cement : 2 Crushed Sand : 4 graded stone aggregate 20 mm nominal size ) ( Item adopted for trench covers)	Cu.M	1328.00			
12.03	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50metres lead as per direction of Engineer-in-charge :					
a)	bituminous road	Sq.M	4942.00			
12.04	<b>Preparation and consolidation of sub grade</b> with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re - rolling the sub grade and disposal of surplus earth lead upto 50 metres.					
		Sq.M	72613.00			
12.05	<b>Supplying and stacking at site</b>					
a)	90 mm to 45 mm size stone aggregate.	Cu.M	20123.00			
b)	Stone screening 13.2 mm nominal size ( Type - A ).	Cu.M	4716.00			
c)	Red bajri.	Cu.M	1572.00			
12.06	<b>Laying, spreading and compacting stone aggregate</b> of specified sizes to WBM specifications including spreading in uniform thickness, hand picking , rolling with 3 wheeled road / vibratory roller 8 - 10 tonne in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate watering and compacting to the required density .	Cu.M	14523.00			
12.07	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required.					
a)	Water bound macadam.	Cu.M	988.00			
12.08	Providing and applying <b>tack coat</b> using hot straight run bitumen of grade 80/ 100 including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :					
a)	On W.B.M. @ 0.75 Kg / sqm.	Sq.M	72613.00			
b)	On bituminous surface @ 0.50 Kg / sqm.	Sq.M	72613.00			



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
12.09	Providing and laying <b>seal coat</b> over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying using 98 kg of bitumen of grade 80/100 and blinding surface with 0.90cum of stone aggregate of 6.7 mm size ( Passing 11.2mm sieve and retained on 2.36mm sieve ) per 100 sqm of road surface including rolling and finishing with power road roller all complete.	Sq.M	72613.00			
12.10	<b>Painting road</b> surface marking with adequate no. of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface <b>in white / yellow shade</b> including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.					
a)	New work ( Two or more coats ).	Sq.M	1452.00			
12.11	<b>Making bell mouth opening / entrance</b> of size 100 x 50 x 50cm for <b>drainage pipe</b> under footpath including providing cement concrete 1 : 3 : 6 ( 1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size ) for shape of bell mouth including plastering providing and fixing precast R.C.C./ S.F.R.C. slab including plastering with cement mortar 1 : 3 ( 1 cement : 3 fine sand ) of 6 mm thickness on exposed surface of the slab & bell mouth including centering, shuttering & neat cement punning inside the bell mouth etc. all complete	Each	656.00			
12.12	<b>Excavating holes Upto 0.10 cum</b> including getting out the excavated soil. then returning the soil as deported in layers not exceeding 20 cm in depth including consolidating and deposited layer by ramming watering etc. Disposing of surplus excavated soil as directed with in a lead of 50 mm and lift Upto 1.5 m.					
a)	All kind of soil.	Each	60.00			
12.13	Providing and laying 60 mm thick factory made <b>cement concrete interlocking paver block</b> of M - 30 grade made by block making machine with strong vibratory compaction and of approved size and design / shape laid in required colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer - in - charge.	Sqm	7295.00			
12.14	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	Cu.m	671.00			
12.15	Providing and laying C.C. pavement of mix M25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).	Cu.m	21784.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
12.16	Providing and Laying <b>U-PVC pipes</b> (working pressure 4 kg / cm <sup>2</sup> ) Single socketed <b>pipe 110 mm dia. Spouts</b> of approved make, complying to relevant IS Code in force, including cutting it to the required size, removing blurr from ends, <b>as Storm Drain Pipe</b> from Road Pavement edge to the Adjoining Storm water drain, laid to required slope and encasing the same from all around, in Cement Concrete of Grade 1 : 2 : 4 ( 1 Cement : 2 Coarse Sand : 4 graded Stone aggregates 20 mm nominal size ), Including, providing and fixing of centering and shuttering, including strutting, propping etc. and removal of form work, curing, backfilling of the space with selected soil available at site etc. complete as directed.	Each	656.00			
12.17	Constructing brick masonry surface drain with bricks of class designation 7.5 in cement mortar 1:4 ( 1 Cement : 4 coarse sand ) including earth excavation , 10cm thick bed concrete 1:5:10 ( 1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size ) and 25 mm thick cement concrete 1:2:4 ( 1 cement 2 coarse sand 4 graded stone aggregate 12.5 mm nominal size) for filling haunches including 12 mm cement plaster 1:4 ( 1 cement : 4 coarse sand ) with a floating coat of neat cement inside and 12 mm thick external plaster with cement mortar 1:6 ( 1 cement : 6 coarse sand ) including connection to existing drain and disposal of surplus earth.					
a)	30 cm Drain 50 cm average depth	Metre	1000.00			
b)	45 cm Wide drain 60 cm average depth	Metre	5836.00			
12.18	Extra for additional depth of brick masonry surface drain					
a)	30 cm Drain 50 cm average depth	Metre	400.00			
b)	45 cm Wide drain 60 cm average depth	Metre	2334.00			
c)	Disposal of excavated earth, lead upto 50m and lift upto 1.5m, within the site premises, disposed earth to be levelled and neatly dressed.	Cu.M	15000.00			
12.19	2.5 cm premix carpet surfacing with 3 cum of stone chippings 10 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS : 8887-1995 using 96 kg per cum of chippings of road surface including consolidation with road roller etc complete.	Sq.M	72613.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
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**13.00 FENCING**

13.01	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					
a)	All kinds of soil.	Cu.m	450.00			
13.02	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :					
a)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size).	Cu.m	30.00			
b)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	Cu.m	30.00			
13.03	Centering and shuttering including strutting, propping etc. and removal of form work for :					
a)	Foundations, footings, bases for columns.	Sq.M	230.00			
13.04	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at plinth level with :					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cu.M	42.00			
13.05	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6mm thick cement plaster 1:6 (1 cement : 6 fine sand).					
		Sq.M	51.00			
13.06	Pointing on stone work with cement mortar 1:3 (1 cement: 3 fine sand) :					
a)	Raised and cut pointing	Sq.M	186.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
13.07	Supplying at site :					
a)	Welded steel wire fabric of required width rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately).	Kg	4875.00			
13.08	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.	Kg	518.00			
13.09	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x60cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40mm nominal size) every 15th post, last but one end post and corner post shall be struted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately) :	Sq.M	500.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>14.00 SIGNAGES</b>						
14.01	Providing & fixing of external signages of varying sizes & shapes using GI sheet of atleast 19G, painting the entire board both surfaces with 1 coat of primer & 2 coats of synthetic enamel painting, lettering of approved type on board of any sizes in English / Hindi or Local language complete as per technical specifications & directions of Engineer.	Sq.ft	100.00			
14.02	Providing Retro-reflective regulatory sign board of size 900mm dia meter made out of 2mm thick aluminium sheet, face to be fully covered with high intensity encapsulated lens type retro -reflective sheeting as approved by Engineer-in-charge . Letters, symbols, borders etc. will be as per IRC - 67 with required colour scheme on the boards and with the high intensity grade A. The aluminium sheet to be riveted to M.S. frame of angle iron of size 40x40x4mm The boards will be fixed to 1 No. 50x50mm square post made of M.S. angle 50x50x4m, 4m long welded to the frame with adequate anti-theft arrangement .Sheet work to be painted with two or more coats of synthetic enamel paint over an under coat (primer) and back side of aluminium sheet to be painted with two or more coats of epoxy paint including appropriate priming coat complete in all respects as per direction of Engineer-in-charge.	Sqm	60.00			
14.03	Providing & Fixing Wall Mounted Nonlit Utility 6" x 6" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	695.00			
14.04	Providing & Fixing Wall Mounted Nonlit Identification sign 18"x5" of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	1774.00			
14.05	Providing & Fixing Wall Mounted Nonlit Utility 24" x 9" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	784.00			
14.06	Providing & Fixing Wall Mounted Nonlit Fire Exit 24" x 9" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	284.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
14.07	Providing & Fixing Wall Mounted Nonlit directory sign 2' x 3' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	49.00			
14.08	Providing & Fixing Wall Mounted Nonlit directory sign 3' x 4' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	7.00			
14.09	Providing & Fixing Wall Mounted Nonlit directory sign 3' x 3.5' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	103.00			
14.10	Providing & Fixing Suspended Nonlit sign 48"x9" of approved make & made of 1" Aluminium framing duly PU painted and 10mm Acrylic element mounted to it from either side with the required text matters stuck on it with plotted Self Adhesive Vinyl bracketed at suitable locations, including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	95.00			
14.11	Providing & Fixing Wall Mounted Nonlit directory sign 15' x 11' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	Nos	4.00			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
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**15 WATERPROOFING**

15.01	Providing and laying integral cement based treatment for waterproofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) 1st layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 2mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.					
a)	Using rough kota stone.	Sq.M	29660.00			
15.02	Providing and laying integral cement based treatment for waterproofing on the vertical surface by fixing specified stone slab 22 mm to 25mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with waterproofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge					
a)	Using rough Kota stone	Sq.M	21467.00			
15.03	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of : i) Ist course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. ii) IInd course of 20mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area. iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 Kg/sqm.)					
		Sq.M	11560.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
15.04	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	Sq.m	6408.00			
15.05	Grading for water proofing treatment with					
a)	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.m	317.00			
15.06	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :					
a)	Dumb bell with central bulb (180mm wide, 8mm thick).	Rmt	7150.00			



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
15.07	<p><b>Protection for treatment of exposed slab, terrace, chajja &amp; balcony</b>  Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment.</p> <p>b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand ) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge.</p> <p>d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep.e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :</p> <p>a) with average thickness of 120mm &amp; minimum thickness at khurra as 65mm</p> <p><b>SUB TOTAL</b></p>	Sq.m	58673.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
<b>16.00 LANDSCAPING WORK</b>						
16.01	Supplying & stacking of good earth at site including royalty & carriage up to 1km (earth measured in stacks will be reduced by 20% for payment.)	Cum	11250.00			
16.02	Supplying & stacking sludge at site including royalty & carriage up to 1km (sludge measured in stacks will be reduced by 8% payment).	Cum	5625.00			
16.03	Supplying & stacking at site dump manure from approved source, including carriage up to 1km (manure measured in stacks will be reduced by 8% payment):					
a)	Screened through sieve of IS designation 20mm	Cum	1875.00			
b)	Screened through sieve of IS designation 16mm	Cum	1875.00			
c)	Screened through sieve of IS designation 4.75mm	Cum	1875.00			
16.04	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	100 sqm.	5000.00			
16.05	Grassing with 'Doob' grass including watering & maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds & fit for mowing including supplying good earth if needed (the good earth shall be paid for separately).					
a)	In rows 7.5cm apart in either direction.	100 sqm.	20000.00			
16.06	Uprooting rank vegetation & weeds by digging the area to a depth of 60cm removing all weeds & other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days & then fine dressing for planting new grass, including disposal of all rubbish with all leads & lifts.	100 sqm	5000.00			
16.07	Preparation of beds for hedging & shrubbery by excavating 60cm deep & trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods & mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, fling with earth if necessary, watering & finally fine dressing leveling etc. including stacking & disposal of materials declared unserviceable & surplus earth by spreading & leveling as directed, within a lead of 50m lift Upto 1.5m complete (cost of sludge, manure of extra earth to be paid for separately):	Cum	12000.00			
16.08	Digging holes in ordinary soil & refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% :1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish & surplus earth, if any with all leads & lifts (cost of manure, sludge or extra good earth if need to be paid for separately).					
a)	Holes 1.2m dia. & 1.2m deep	Each	216.00			
b)	Holes 60cm dia. & 60cm deep	Each	125.00			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
16.09	Edging with bricks laid dry length wise including excavation, refilling, consolidating with hand packing & spreading neatly surplus earth within a lead of 50m:					
a)	75 class designation					
i)	F.P.S Bricks	Metre	300.00			
b)	50 class designation					
i)	F.P.S Bricks	Metre	200.00			
16.10	Excavation in dumped stones or malba including stacking of serviceable & unserviceable material lead up to 50m & lift up to 1.5m. disposed material to be neatly dressed.	Cum	48.00			
16.11	Cutting down small tree Upto 230 mm. dia. of trunk including removing of roots completely and depositing the cut- materials to respective Ward Office as directed.	Nos.	125.00			
16.12	Do- -do- large trees over 230 mm dia.	Nos.	216.00			
16.13	Cleaning the areas which are not under lawns of all debris and construction material and spreading 1" thick layer of clean, sieved red murrum and compacting the same.	Sqm.	5000.00			
16.14	Maintaining all the plant material-trees, shrubs, ground covers, hedge, climbers and lawn for 12 months after all the planting is completed and inspected by the landscape consultant and approved by him	L/S	2257.00			
16.15	Plantation of tree sapling, stacking of the tree sapling, preparation of tree basin, watering & maintaining till 30 days after competition plantation & replacement of casualties till 30 days (excluding the cost of the plant)	Tree	2257.00			
16.16	Transplantation of the existing trees of grith of all dia. Including uprooting & shifting of the trees & placing in pit of suitable size & after transplanting, removal of excavated earth to desired location, filling of the trench taken for exposing the root system of the tree poposed to be transplanted etc. complete as directed by Engineer in charge	Nos.	341.00			
16.17	Providing, supplying, transplanting saplings upto height 1.80 M of various variety in good of various varity in good/ live condition with roots covered in good soil with polythene bags at various location in campus etc. complete as directed by Engineer in charge.	Nos.	500.00			
16.18	Providing and fixing M.S. flat iron tree guard 60cm dia. and 2m height above ground level formed of 4 nos. 25x6mm and 8 nos. 25x3mm vertical M.S. flats rivetted to 3 nos. 25x6mm M.S. flat iron rings in two halves, bolted together with 8mm dia. and 30mm long bolts including painting two coats with paint of approved brand and manufacture over a coat of priming, complete in all respects.	Nos	2257.00			
<b>SUB TOTAL</b>						

**Construction of Hospital Building, Academic Block & Students Hostel with associated Services Under Comprehensive  
redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals, New Delhi  
BILL OF QUANTITIES -PHE-HOSPITAL BLOCK**

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
1	2	4	17			
<b>A.</b>	<b>INTERNAL PLUMBING WORK</b>					
	<b>SUB HEAD - I - SANITARY FIXTURES</b>					
1	Providing & fixing vitreous china dual purpose closet suitable for use as squatting pan or European type water closet (Anglo Indian W.C. pan) with seat lid with C.P. brass hinges and rubber buffers, 10 litre low level flushing cistern with fitting and brackets, 40mm flush bend 20mm over flow pipe with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the wall and floor wherever required.					
1.1	White vitreous china dual purpose WC pan with white solid plastic seat and lid with white vitreous china flushing cistern and C.P. flush bend.	Each	172			
2.	Providing and fixing white vitreous china pedestal type water closet ( <b>European type W. C. Pan</b> ) with seat and lid, 10 litre low level white PVC flushing cistern with manually controlled device (handle lever) conforming to IS: 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required.					
2.1	W.C. pan with ISI marked white solid plastic seat & lid.	Each	5			
3	Providing and fixing white vitreous China flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting or fittings and brackets, cutting and making good the walls and floors wherever required.					
3.1	One urinal basin with 5 litre white PVC automatic flushing cistern	Each	228			
3.2	Range of two urinal basin with 5 litre white PVC automatic flushing cistern.	Each	28			
3.3	Range of three urinal basin with 10 litre white PVC automatic flushing cistern.	Each	14			
4	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:					
4.1	<b>Flat back wash basin size 630 x 450 mm</b> with a pair of 15 mm C.P. brass pillar taps.	Each	114			
4.2	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	Each	169			
4.3	White Vitreous Surgeon type wash basin of size 660 x 460 mm with a pair of 15 mm C.P. brass pillar taps, with elbow operated levers.	Each	10			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
5	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:					
5.1	Kitchen sink with drain board 510 x 1040 bowl depth 200 mm	Each	53			
6	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug 40 mm C.P. brass waste and 40 mm brass trap with necessary C.P. brass unions complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					
6.1	Size 600x450x200 mm	Each	87			
7	Providing and fixing <b>600 x 450mm beveled edge mirror</b> of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	950			
8	Providing and fixing toilet paper holder .					
8.1	C.P. Brass	Each	640			
9	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms.	Each	990			
10	Extra for providing and fixing CP brass exposed type push button flushing valve and 32 mm dia flushing bend complete with all respect in place of normal PVC flushing cistern with manually control device confirming to IS 7231.	Each	820			
11	Providing, fixing, testing and commissioning of white colour vitreous China <b>wall mounting type European water closet</b> with C.P. bolts, nuts, C.I. chair or other hanging arrangements, 32 mm CP brass exposed type push button flush valve, 32mm flush bend, bakelite seat & cover with C.P. hinges & rubber buffers, C.P. brass screw, washer with all accessories including cutting & making good the walls & floors slab wherever required .	Each	649			
12	Providing and fixing white vitreous china oval shape wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required.	Each	657			
	Counter top oval shape wash basin size 560 x 450 mm with centre tap hole, single 15 mm CP brass pillar tap					
13	Providing and fixing CP brass towel rail size of 600 x 20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws					
13.1	C.P. brass towel rail with two C.P. brass brackets 600 x 20 mm size.	Each	442			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
14	Providing and fixing, testing & commissioning of CP brass angle valve with ABS Health Faucet (complete with hook and flexible SS tube min. Length 1.0 m) as required.	Nos.	850			
15	Providing and fixing <b>CP brass twin coat hooks</b> fixed on toilet door/wall with CP brass screws.	Each	792			
16	Providing and fixing C.P. Brass <b>grab bar</b> .	Nos.	170			
17	Providing and fixing Hospital white vitreous china <b>bed pan sink</b> with P trap, size 600 x 450 mm with 10 litres C.I. High level flushing cistern flush pipe, C.I./M.S. bracket painting with 3 coats of white paint complete with accessories, C.P. brass fittings with vertical jet horizontal spray complete with control cocks.	Each	62			
18	Providing, fixing, testing 15mm C.P. brass wall mounted mixing fitting for Lab/kitchen sink with swinging spout complete including cutting and making good the walls where required.	Each	140			
19	Providing and fixing raised toilet seat with cover for handicap toilet.	Nos.	47			
20	Providing and fixing 2-Bay Scrub station made out of SS304 complete with all accessories i.e. touchless Imported sensors, thermostatic mixing valve, Strainers & Manual foot operated bypass system etc. (1600mm) including connecting to drainage and water points and making good cutting of walls and floor surface all complete.	Each	9			
21	Providing, fixing, testing 15mm C.P. brass elbow operated tap for Lab / kitchen sink with swinging spout complete including cutting and making good the walls where required.	Each	34			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - II - SOIL, WASTE AND VENT PIPES, RAIN WATER PIPES</b>					
<b>1</b>	Providing and fixing soil, waste and vent pipes.					
1.1	100 mm dia.					
1.1.1	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	12281			
1.2	75 mm dia					
1.2.1	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	1544			
1.3	150 mm dia pipe as per IS:3989	Metre	4106			
<b>2</b>	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.					
2.1	for 100 mm dia. pipe	Each	3520			
2.2	for 75 mm dia. pipe	Each	996			
2.3	for 150 mm dia pipe	Each	1691			
<b>3</b>	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					
3.1	100 mm					
3.1.1	Sand cast iron S&S as per IS-3989	Each	1780			
3.2	150 mm Sand cast iron S&S as per IS-3989	Each	126			
<b>4</b>	Providing and fixing plain bend of required degree.					
4.1	100 mm					
4.1.1	Sand cast iron S&S as per IS:3989	Each	2676			
4.2	75 mm					
4.2.1	Sand cast iron S&S as per IS:3989	Each	648			
4.3	150 mm Sand cast iron S&S as per IS:3989	Each	39			
<b>5</b>	Providing and fixing heel rest sanitary bend.					
5.1	100 mm dia					
5.1.1	sand cast iron S&S as per IS-3989	Each	81			
5.2	150 mm sand cast iron S&S as per IS-3989	Each	56			
<b>6</b>	Providing and fixing double equal plain junction of required degree.					
6.1	100 x 100 x 100 x 100 mm					
6.1.1	Sand cast iron S&S as per IS-3989	Each	271			
<b>7</b>	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.					
7.1	100x100x100mm					
7.1.1	sand cast iron S&S as per IS-3989	Each	1523			
<b>8</b>	Providing and fixing single equal plain junction of required degree					
8.1	100x100x100mm					
8.1.1	sand cast iron S&S as per IS-3989	Each	2945			
8.2	75x75x75mm Centrifugally cast (spun) iron S&S					
8.2.1	sand cast iron S&S as per IS-3989	Each	731			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
8.3	150 x 150 x 150 mm sand cast iron S&S as per IS-3989	Each	70			
<b>9</b>	Providing and fixing single unequal junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.					
9.1	100x100x75mm					
9.1.1	sand cast iron S&S as per IS-3989	Each	1265			
9.2	150 x 150 x 100 mm sand cast iron S&S as per IS-3989	Each	831			
<b>10</b>	Providing and fixing single unequal plain junction of required degree					
10.1	150x150x75 mm	Each	579			
10.2	150 x 150 x 100 mm	Each	420			
<b>11</b>	Providing and fixing terminal guard.					
11.1	100 mm					
11.1.1	sand cast iron S&S as per IS-3989	Each	214			
11.2	75 mm					
11.2.1	sand cast iron S&S as per IS-3989	Each	54			
11.3	150mm sand cast iron S&S as per IS-3989	Each	112			



S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>12</b>	Providing and fixing collar					
12.1	100 mm					
12.1.1	Sand cast iron S&S as per IS-3989	Each	1312			
12.2	75 mm					
12.2.1	Sand cast iron S&S as per IS-3989	Each	386			
12.3	150mm Sand cast iron S&S as per IS-3989	Each	754			
<b>13</b>	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
13.1	100 mm	Each	29991			
13.2	75 mm	Each	4501			
13.3	150mm	Each	6136			
<b>14</b>	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :					
14.1	100 mm	Each	210			
14.2	75 mm	Each	54			
14.3	150mm	Each	112			
<b>15</b>	Providing and fixing trap of self cleansing with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:					
15.1	100 mm inlet and 100 mm outlet					
15.1.1	Sand cast iron S&S as per IS-3989	Each	1599			
<b>16</b>	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:					
16.1	100 mm diameter pipe	Metre	6659			
16.2	75 mm diameter pipe	Metre	1544			
16.3	150 mm diameter pipe	Metre	3946			
<b>17</b>	Providing and fixing on wall face/Concealed unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes					
17.1	110 mm diameter (6 kg/sq. cm)	Metre	302			
17.2	160 mm diameter (6 kg/sq. cm)	Metre	5691			
<b>18</b>	Providing and fixing on wall face/Concealed unplasticised - PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion.					
18.1	Single tee without door					
18.1.1	160x160x160 mm	Each	46			
18.2	Bend 87.5 degree					
18.2.1	110 mm bend	Each	8			
18.3	160 mm bend	Each	172			
18.4	Shoe (Plain)					
18.4.1	110 mm shoe	Each	8			
18.5	160 mm shoe	Each	172			
<b>19</b>	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	Each	180			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>20</b>	Providing and laying cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size) 80 mm thick all-round the SCI/centrifugally S&S pipe diameter.					
20.1	100 mm dia	Metre	4001			
20.2	150 mm dia	Metre	82			
<b>21</b>	Providing and fixing G.I. pipes complete with G.I. fittings including painting, jointing, testing the cost of cutting the chases and making good the same for waste water disposal complete as per direction of engineer incharge.					
21.1	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	Metre	113			
21.2	40 mm dia nominal bore (Sink, Urinal to floor trap)	Metre	2170			
21.3	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	671			
<b>22</b>	Providing and fixing C.P. brass bottle trap for wash basin including CP waste fittings complete 32 mm dia complete in all respect of approved quality.	Each	950			
<b>23</b>	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	Each	345			
<b>24</b>	Providing and fixing clean out/floor clean out plug consist of CI bend & GI socket heavy class with cap & key for opening male threaded cap etc. including lead caulked to CI pipes complete in all respects as per drawing/ sample approved by Engineer -in - Charge FCO (floor clean out plug shall be flushed with floor finish					
24.1	100 mm dia	Each	442			
24.2	150 mm dia	Each	26			
<b>25</b>	Providing and fixing cleaning eye on horizontal CI soil & waste pipes of 300 mm long GI medium class pipe with one plain end lead caulked in to the collar of CI pipe and the other end with flange which in covered by neoprene rubber gasket and blank flange, complete with nuts, bolts etc and hot dip galvanization after fabrication to the satisfaction of Engineer in Charge					
25.1	100 mm dia	Each	101			
25.2	150 mm dia	Each	62			
25.3	200 mm dia	Each	13			
<b>26</b>	Providing and fixing G.I EXTENSION PIECE for 100 mm dia floor trap formed out of main pipe (Type A) with multiple side inlets, suitable for various dia pipes, side connections, including all fixtures and fittings as per site conditions and as per standard details and water tight sealing of joints and area surrounding the grating and as directed.	Each	1599			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - III - WATER SUPPLY</b>					
<b>1</b>	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.					
	Internal work- Exposed on wall					
1.1	15 mm nominal outer dia pipes (SDR-11)	Metre	690			
1.2	20 mm nominal outer dia pipes (SDR-11)	Metre	5713			
1.3	25 mm nominal outer dia pipes (SDR-11)	Metre	6086			
1.4	32 mm nominal outer dia pipes (SDR-11)	Metre	6424			
1.5	40 mm nominal outer dia pipes (SDR-11)	Metre	4751			
1.6	50 mm nominal outer dia pipes (SDR-11)	Metre	4489			
<b>2</b>	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.					
	Concealed work including cutting chases and making good the walls etc.					
2.1	15 mm nominal outer dia pipes (SDR-11)	Metre	5086			
2.2	20 mm nominal outer dia pipes (SDR-11)	Metre	3825			
2.3	25 mm nominal outer dia pipes (SDR-11)	Metre	2550			
2.4	32 mm nominal outer dia pipes (SDR-11)	Metre	1826			
2.5	40 mm nominal outer dia pipes (SDR-11)	Metre	1288			
2.6	50 mm nominal outer dia pipes (SDR-11)	Metre	781			
2.7	65 mm nominal outer dia pipes (SDR-11)	Metre	283			
<b>3</b>	Providing and fixing grade G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. (Internal work):					
	Exposed on Wall					
3.1	65 mm dia nominal bore	Metre	3803			
3.2	80 mm dia nominal bore	Metre	3642			
3.3	100 mm dia nominal bore	Metre	2874			
3.4	150 mm dia nominal bore	Metre	210			
<b>4</b>	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
4.1	25 mm nominal bore	Each	117			
4.2	32 mm nominal bore	Each	147			
4.3	40 mm nominal bore	Each	101			
4.4	50 mm nominal bore	Each	94			
<b>5</b>	Providing and fixing unplasticised PVC connection pipe with brass unions:					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
5.1	45 cm length					
5.1.1	15 mm nominal bore	Each	1041			
<b>6</b>	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet					
6.1	100 mm diameter	Each	194			
<b>7</b>	Painting CPVC/G.I. pipes and fittings with synthetic enamel white paint over a ready mixed priming coat, both of approved quality for new work.					
7.1	15 mm nominal outer dia pipes	Metre	810			
7.2	20 mm nominal outer dia pipes	Metre	5811			
7.3	25 mm nominal outer dia pipes	Metre	6342			
7.4	32 mm nominal outer dia pipes	Metre	6768			
7.5	40 mm nominal outer dia pipes	Metre	5019			
7.6	50 mm nominal outer dia pipes	Metre	4625			
7.7	65 mm nominal outer dia pipes	Metre	3803			
7.8	80 mm nominal outer dia pipes	Metre	3642			
7.9	100 mm nominal outer dia pipes	Metre	2874			
7.10	150 mm nominal outer dia pipes	Metre	210			
<b>8</b>	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.					
8.1	15 mm diameter pipe	Metre	5086			
8.2	20 mm diameter pipe	Metre	3825			
8.3	25 mm diameter pipe	Metre	2550			
8.4	32 mm diameter pipe	Metre	1826			
8.5	40 mm diameter pipe	Metre	1288			
8.6	50 mm diameter pipe	Metre	781			
<b>9</b>	Providing and fixing C.P brass bib cock of approved quality conforming to IS:8931.					
9.1	15 mm nominal bore	Each	76			
<b>10</b>	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.					
10.1	15 mm nominal bore	Each	485			
<b>11</b>	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make confirming to IS:8931					
11.1	15 mm nominal bore	Each	370			
<b>12</b>	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931.					
12.1	15 mm nominal bore	Each	1335			
<b>13</b>	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
13.1	40 mm nominal bore	Each	13			
<b>14</b>	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end). (for Hot Water supply)					
14.1	25 mm nominal bore	Each	39			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
14.2	32 mm nominal bore	Each	48			
14.3	40 mm nominal bore	Each	47			
14.4	50 mm nominal bore	Each	48			
<b>15</b>	Extra for covering with nitrle rubber insulation 9 mm thick insulation for gate valve as per specification. (10% of Price of Gate valve)					
15.1	25 mm nominal bore	Each	39			
15.2	32 mm nominal bore	Each	48			
15.3	40 mm nominal bore	Each	47			
15.4	50 mm nominal bore	Each	48			
<b>16</b>	Providing and fixing Nitrile Rubber Insulation 9 mm thick on hot water supply/return pipes without outer mechanical protection					
16.1	15 mm dia.	Metre	1516			
16.2	20 mm dia.	Metre	1410			
16.3	25 mm dia.	Metre	943			
16.4	32 mm dia.	Metre	456			
16.5	40 mm dia.	Metre	299			
16.6	50 mm dia.	Metre	198			
16.7	65 mm dia.	Metre	56			
<b>17</b>	Providing and fixing nitrle rubber insulation on hot water supply / return pipes complete with fire proof outer mechanical protection on nitrile rubber insulation.					
17.1	15 mm dia. (9 mm thickness)	Metre	260			
17.2	20 mm dia. (9 mm thickness)	Metre	2508			
17.3	25 mm dia. (9 mm thickness)	Metre	2771			
17.4	32 mm dia. (13 mm thickness)	Metre	2279			
17.5	40 mm dia. (13 mm thickness)	Metre	2030			
17.6	50 mm dia. (13 mm thickness)	Metre	1904			
17.7	65 mm dia. (19 mm thickness)	Metre	1570			
17.8	80 mm dia. (19 mm thickness)	Metre	1374			
17.9	100 mm dia. (19 mm thickness)	Metre	165			
17.10	150 mm dia. (19 mm thickness)	Metre	105			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>18</b>	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.					
18.1	15 mm diameter	Each	172			
18.2	20 mm diameter	Each	181			
<b>19</b>	Providing and fixing Butter fly valve with nitrile seat and stainless steel stem with lever operation and cast iron body in powder coated finish, suitable for test pressure of 10Kg/sq.mm) with flanges, gaskets and necessary pad locking arrangement complete required.					
19.1	65 mm dia.	Each	48			
19.2	80 mm dia.	Each	9			
19.3	100 mm dia.	Each	9			
19.4	150 mm dia.	Each	4			
<b>20</b>	Providing and fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball, union / flange, washer, nuts & bolt. Rated to temperature of 85 deg. C and testing to a pressure not less than 10 Kg/sq.cm including covering with nitrile rubber insulation 9 mm thick insulation as per specification.					
20.1	15 mm dia.	Each	7			
20.2	20 mm dia.	Each	55			
<b>21</b>	Providing and fixing Butter fly valve with nitrile seat and stainless steel stem with lever operation and cast iron body in powder coated finish of approved make with union/flange, washer, nuts & bolts, rated to temperature of 85°C and tested to a pressure not less than 15Kg/sq.cm. Including nitrile rubber insulation 9 mm thick insulation with proprietary fire proof protective coating against mechanical damage as per manufacturer's specification complete in all respects as required.					
21.1	65 mm dia.	Each	10			
21.2	80 mm dia.	Each	16			
21.3	100 mm dia.	Each	10			
21.4	150 mm dia.	Each	3			
<b>22</b>	Supply, installation, testing and commissioning of drinking water cooler having a stainless steel water storage tank of capacity 80 litres. The water cooler shall be complete with a suitable capacity refrigeration unit with hermetically sealed compressor, refrigerant piping, necessary wiring, controls, full charge of refrigerant and all other accessories required complete in all respects. The water cooler shall be capable of delivering 40 Litres/ hour of cooled water. The water cooler shall have the facility to adjust the temperature of water and shall be complete with drinking faucets, drip tray, mounting frames, required piping for inlet and outlet connections with valves and complete as per specifications	Each	78			
<b>23</b>	Extra for providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic flushing system of approved make instead of urinals with flushing cistern. The automatic flushing system shall comprising of:					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Light sensing device fixed in recessed metallic box with tamper resistant stainless steel outercase Solenoid valve housed in a recessed metallic box with openable cover mounted at high level (at desired height from finished floor level) complete with interconnecting control wiring in recessed PVC conduit between solenoid valve and sensing unit, including cutting and making good the walls & floor complete and all necessary fittings to make it operational as directed	Each	302			
<b>24</b>	Providing and fixing in position storage type hot water electrical heaters with copper container, insulation, and stoveenamelled M.S jacket, thermostatically controlled immersion heater, with pilot lamp, 15/20mm dia inlet with non-return valve and 15/20mm dia outlet including making connections complete in all respect. (wall mounted with suitable M.S bolts and nuts)					
24.1	Capacity 15 liters	Each	12			
24.2	Capacity 25 liters	Each	47			
<b>25</b>	Supplying, assembly, erection, testing and commissioning of RO Water treatment system and all its components of required size as per water test analysis to make the water suitable for drinking. The cost will include testing of permeate water sample from a CPCB approved test laboratory, generating and providing membrane analysis data form the licensed manufacturer's software etc.	Each	78			
	Permeate water quantity = 50 lit/hr.					
	Max. Duty Cycle =250 litres/ day					
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>SUB HEAD - IV - SEWERAGE &amp; DRAINAGE</b>						
<b>1</b>	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.					
1.1	150 mm diameter	Metre	335			
<b>2</b>	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:					
2.1	150 mm diameter S.W. pipe/RCC NP2	Metre	335			
<b>3</b>	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:.					
3.1	180 x 150mm size P type F.P.S. Bricks class designation 75	Each	137			
<b>SUB TOTAL</b>						



S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>B. EXTERNAL PLUMBING WORK</b>						
<b>SUB HEAD - V - EXTERNAL WATER SUPPLY</b>						
1.	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. (external work)					
1.1	20 mm dia nominal bore	Metre	66			
1.2	25 mm dia nominal bore	Metre	215			
1.3	32 mm dia nominal bore	Metre	265			
1.4	40 mm dia nominal bore	Metre	155			
1.5	50 mm dia nominal bore	Metre	280			
1.6	65 mm dia nominal bore	Metre	260			
2	Providing and laying S&S Centrifugally Cast (Spun)/Ductile Iron pipes confirming to is:8329:					
2.1	80 mm dia Ductile Iron Class k-7 pipes	Metre	2915			
2.2	100 mm dia Ductile Iron Class k-7 pipes	metre	875			
2.3	150 mm dia Ductile Iron Class k-7 pipes	metre	950			
2.4	200 mm dia Ductile Iron Class k-7 pipes	metre	70			
2.5	250 mm dia Ductile Iron Class k-7 pipes	metre	10			
3	Providing push-on-joints to Centrifugally (Spun) Cast Iron pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket					
3.1	80 mm dia pipes	joint	1249			
3.2	100 mm dia pipes	joint	375			
3.3	150 mm dia pipes	joint	407			
3.4	200 mm dia pipes	joint	30			
3.5	250 mm dia pipes	joint	4			
4	Providing and laying D.I. specials of class k-12 suitable for push-on jointing as per IS:9523					
4.1	Upto 600 mm dia	quintal	75			
5	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.					
5.1	for 20 mm nominal bore	Each	44			
5.2	for 32 mm nominal bore	Each	2			
5.3	for 40 mm nominal bore	Each	5			
5.4	for 50 mm nominal bore	Each	5			
5.5	for 65 mm nominal bore	Each	1			
6	Providing and fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball, union / flange, washer, nuts & bolt. Rated to temperature of 85 degree C and testing to a pressure not less than 10kg/sq.cm including covering with nitrile rubber insulation 9mm thick insulation as per specification					
6.1	25 mm dia	Each	2			
6.2	32 mm dia	Each	6			
6.3	40 mm dia	Each	4			
6.4	50 mm dia	Each	4			
6.5	65 mm dia	Each	4			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>7</b>	Providng and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) (Class II)					
7.1	for 80 mm nominal bore	Each	7			
7.2	for 100 mm nominal bore	Each	10			
7.3	for 150 mm nominal bore	Each	7			
7.4	for 200 mm nominal bore	Each	1			
7.5	for 250 mm nominal bore	Each	1			
<b>8</b>	Providng and fixing Butter Fly valve with nitrile seat and stainless steel stem with lever operation and cast iron body in powder coated finish of approved make with union/flange, washer, nuts & bolts, rated to temperature of 85 degree C and tested to a pressure not less tahn 15kg/sq.cm. including nitrile rubber insulation 9 mm thick insulation with proprietary fire proof protective coating against mechanical damage as per manufacturer's specification complete in all respects as required					
8.1	80 mm dia	Each	1			
8.2	100 mm dia	Each	1			
<b>9</b>	Providing and fixing nitrle rubber insulation 9 mm thick on hot water supply / return pipes complete with fire proff outer mechanical protection on nitrile rubber insulation					
9.1	25 mm dia	Meter	215			
9.2	32 mm dia	Meter	215			
9.3	40 mm dia	Meter	75			
9.4	50 mm dia	Meter	160			
9.5	65 mm dia	Meter	150			
9.6	80 mm dia	Meter	135			
9.7	100 mm dia	Meter	70			
<b>10</b>	Constructing masnory chamber 90x90x100 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm, top diameter, 160mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design					
10.1	With F.P.S. bricks	Each	2			
<b>11</b>	Constructing masonry Chamber 60 x 60 x 75 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chain lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.					
11.1	With F.P.S. bricks	Each	26			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
12	Constructing masonry Chamber 30 x 30 x 55 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chain lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.					
12.1	With F.P.S. bricks	Each	77			
13	Providing and filling sand of grading zone V or coarser grade around the G.I. pipes in external work.					
13.1	20 mm dia nominal bore	Metre	66			
13.2	25 mm dia nominal bore	Metre	215			
13.3	32 mm dia nominal bore	Metre	265			
13.4	40 mm dia nominal bore	Metre	155			
13.5	50 mm dia nominal bore	Metre	280			
13.6	65 mm dia nominal bore	Metre	260			
13.7	80 mm dia nominal bore	Metre	2915			
14	Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc. if required will be paid separately)					
14.1	100 mm dia	Each	2			
15	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up plinth level (for thrust block)					
15.1	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	4			
16	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately)					
16.1	80 mm dia nominal bore	Each	1			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - VI - EXTERNAL SEWERAGE &amp; DRAINAGE</b>					
<b>1</b>	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50m					
1.1	Pipes, cables etc. exceeding 80mm dia. But not exceeding 300mm dia.	Metre	3088			
1.2	Pipes, Cables etc. not exceeding 300mm dia but not exceeding 600 mm	Metre	360			
<b>2</b>	Extra over for item no. 1.1 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre)	Metre	338			
<b>3</b>	Extra over for item no. 1.2 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 3 m, but not exceeding 4.5 m. (Rate is over corresponding basic item for depth up to 1.5 metre)	Metre	176			
<b>4</b>	Extra over for item no. 1.2 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 4.5 m & above (Rate is over corresponding basic item for depth up to 1.5 metre)	Metre	269			
<b>5</b>	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.					
5.1	200 mm diameter	Metre	1780			
5.2	250 mm diameter	Metre	1018			
<b>6</b>	Providng and laying S&S centrifugally cast (spun) iron pipes (class LA) confirming to IS-1536					
6.1	200 mm dia	Metre	30			
<b>7</b>	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete.					
7.1	150 mm dia R.C.C pipe	Metre	70			
7.2	300 mm dia R.C.C pipe	Metre	190			
<b>8</b>	Providing and laying non-pressure NP3 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete.					
8.1	400 mm dia. R.C.C. pipe.	Metre	290			
8.2	450 mm dia. R.C.C. pipe.	Metre	70			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>9</b>	Providing and laying cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) around S.W./RCC pipes including bed concrete as per standard design:					
9.1	150 mm diameter	Metre	70			
9.2	200 mm diameter	Metre	1780			
9.3	250 mm diameter	Metre	255			
9.4	300 mm diameter	Metre	48			
9.5	400 mm diameter	Metre	73			
9.6	450 mm diameter	Metre	70			
<b>10</b>	Providing and laying cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) upto haunches of S.W. pipes including bed concrete as per standard design:					
10.1	250 mm diameter	Metre	764			
10.2	300 mm diameter	Metre	143			
10.3	400 mm diameter	Metre	218			
<b>11</b>	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed. (For Manholes)					
11.1	All kinds of soil	Metre	810			
<b>12</b>	Constructing brick masonry manhole cement mortar 1:4 (1 cement : 4 coarse sand) R.C.C. top slab with 1:2:4 mix (1cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ), foundation concrete 1:4:8 mix (1cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making necessary channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.					
12.1	Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) With F.P.S. bricks with class designation 75	Each	45			
12.2	Inside size 120 x 90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) With F.P.S. bricks with class designation 75	Each	80			
<b>13</b>	Extra depth for manholes					
13.1	Size 90 x 80 cm (With With F.P.S. bricks with class designation 75)	Metre	20			
13.2	Size 120x 90 Cm (With F.P.S. bricks with class designation 75)	Metre	14			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
14.	Material and labour for constructing brick masonry circular type manhole 0.91 m dia internal at bottom and 0.56 m dia at top with bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement					
	0.91 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
14.1	With F.P.S. bricks with class designation 75	Each	20			
15.	Extra depth for circular type manhole 0.91m internal dia (at bottom) with beyond 0.91m to 1.67m					
15.1	With F.P.S. bricks class designation 75	Metre	10			
16.	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top with 35 class designation F.P.S brick in cement mortar 1:4 ( 1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.					
	1.68 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
16.1	With F.P.S. bricks with class designation 75	Each	16			
17.	Extra depth for circular type manhole 1.22m internal dia (at bottom) with beyond 1.68m to 2.29m					
17.1	With F.P.S. bricks class designation 75	Metre	6			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
18.	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top with 35 class designation F.P.S brick in cement mortar 1:4 ( 1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.					
	2.30 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
18.1	With F.P.S. bricks with class designation 75	Each	25			
19.	Extra depth for circular type manhole 1.52m internal dia (at bottom) with beyond 2.30m					
19.1	With F.P.S. bricks class designation 75	Metre	9			
20	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:					
20.1	With F.P.S. bricks	each	35			
21	Extar depth beyond 45 cm of brick masnory chamber					
21.1	For 455 x 610 mm size					
	With F.P.S. bricks	Metre	3			
22	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specification and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30 x 20 x 15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	285			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
23	Material & labour for constructing R.C.C. Grease trap of size 2200mm x 1500mm x 2500mm deep with RCC walls with inlet & outlet including necessary excavation and foundation concrete 100mm thick in 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate of 40mm nominal size), inside plaster 12mm thick in cement mortar 1:4 (1 cement : 4 coarse sand) finished with a floating coat of neat cement, RCC base slab, roof slab & baffle walls including reinforcement, centering & shuttering including 12mm dia steel bar footrests etc. and SFRC manhole cover and frame of 600mm x 450mm internal dimension conforming to IS: 12592 (total weight of cover & frame shall not be less than 70 kg)	Each	1			
24	Constructing Brick masonry percolation pit 3m dia and 5m deep with bricks of class designation 7.5 in cement mortar 1:6, base concrete 1:4:8 below the brick wall, including cost of necessary excavation in any type of soil, back filling as required in 20cm thick layers, dewatering if any, shuttering and shoring and disposal of surplus excavated material within the AWHO plot. 2 nos. 300mm dia borings to a depth of 50 metre (to be measured from the bottom of the percolation pit), provisioning and fixing 160mm O.D. PVC pipes, tested to 6kg/sqcm, in each bore and upto the height of 300mm above the RCC top slab. The PVC pipe shall be slotted except 3.0 metres at the top and 3.0 metres below from the bottom of the percolation pit, which shall be blind. Top of the PVC pipe shall be covered with PVC Socket & plug. Each bore around the PVC pipe shall be filled with pea gravels. The percolation pit shall be filled with river stone/pebbles as shown in drawing. The top slab shall be 150mm thick with RCC M20 including nominal reinforcement and 2 nos. of 560mm internal dia SFRC manhole covers with frames conforming to IS:12592 (total weight of cover & frame shall not be less than 182 kg) shall be provided in the top slab. PVC encased 12mm dia steel bar Footrests shall be provided 300 centre to centre. The above shall be provided all as specified and shown on drawings 01. 300mm dia RCC pipe for inlet and overflow as shown on drawings shall be measured separately.	Each	7			
25	Material & labour for constructing Silt trap of size 1500mm x 3000mm x 2000mm deep in R.C.C. walls including necessary excavation and foundation concrete 150mm thick in 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate of 40mm nominal size), inside plaster 12mm thick in cement mortar 1:4 (1 cement : 4 coarse sand) finished with a floating coat of neat cement, C.C. floor, RCC slab in mix 1:2:4 & RCC baffle wall including reinforcement, centering & shuttering including 12mm dia steel bar footrests etc. and SFRC manhole cover and frame of 610mm x 455mm internal dimension conforming to IS: 12592 (total weight of cover & frame shall not be less than 70 kg)	Each	7			
26	Extra for each 1m boring or part thereof beyond 50m depth for all the two Bores including provisioning and fixing of PVC slotted pipes.	Metre	70			



S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
27	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1 : 3 (1 cement : 2 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete:					
27.1	For pipes 250 to 300 mm diameter	Each	1			
28	Constructing brick masonry surface drain with bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) including earth excavation , 10cm thick bed concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) and 25 mm thick cement concrete 1:2:4 (1 cement 2 coarse sand 4 graded stone aggregate 12.5 mm nominal size) for filling haunches including 12 mm cement plaster 1:4 (1 cement : 4 coarse sand ) with a floating coat of neat cement inside the drain, its top and exposed side and 12mm thick external plaster with cement mortar 1:6 (1 cement : 6 coarse sand) including connection to existing drain and disposal of surplus earth.					
28.1	30 cm drain 50cm average depth	Metre	2170			
28.2	45 cm wide drain 60 cm average depth	Metre	50			
29	Extra for additional depth for brick masonry surface drain.					
29.1	30 cm drain 50cm average depth	Metre	182			
29.2	45 cm wide drain 60 cm average depth	Metre	9			
30	Providing and fixing in position SFRC drain covers including perforation as required over drains for the following sizes :-					
30.1	for 30 cm wide drain sleeve size 75cm x 60cm & 7cm thick	Metre	2170			
30.2	for 45 cm wide drain sleeve size 90cm x 60cm & 9cm thick	Metre	50			
31	Making connection of storm water drain with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1 : 3 (1 cement : 2 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete:					
31.1	For pipes 350 to 450 mm diameter	Each	3			
32	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	Metre	567			
33	Removal of surplus earth by mechanical transport upto 10 K.M.	Cum	243			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - VII - PUMPS &amp; EQUIPMENT</b>					
1	Providing and fixing of package type skid mounted hydropneumatic system comprising of:					
(a)	Horizontal / Vertical inline single/multistage centrifugal pumping set with stainless steel SS stage casing and SS impellers with stainless steel shaft, cast iron suction & discharge casing, connected to suitable capacity TEFC ventilated induction motor 2 pole, 2900rpm, suitable for 415+10% Volts, 3 phase, 50 Hz A.C. supply.					
(b)	Pressure vessel of non corrosive FRP composite construction lined with NSF and/or FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of 5 times the vessel operating pressure and cycle tested for 2,50,000 cycles.					
	No. and capacity of Pressure Vessel - 01 Nos. x 100 Ltrs.					
(c)	Electrical Control Panel including provision for cyclic operation of pumps - Pump working sequence should change after every operation. Control panel with programmable logic controller (PLC) with inbuilt PID controller, digital display with fluorescent screen, one no. 3 ph, 415±10%V, AC variable speed drive of suitable capacity rating with inbuilt EN55011 class A RFI filters, having standard function of BI loop, energy saving catching a spinning load with speed search, auto hunting jog preset speeds, controlled stop on loss of supply power loss side through, DDC injection breaking fast stop. Drive should have selectable rated input frequency 50/60 Hz and output frequency range of 0.5-32 Hz, contactors, overload relays and MCBs should conform to IEC 898-1995 standards Ammeter, voltmeter. All trip indications should blink in case of trip and panels should only be accessible through an access code.					
(d)	Electronic Pressure switches having maximum pressure and differential scale should confirming BS-6134 standards and IP55 protection class.					
(e)	Complete set system to be mounted on a common MS base frame and shall follow following duty.					
(f)	The cost will include making necessary flanged suction and delivery headers in GI (C class)					
(g)	Motor to be of the same make as the pump (Vendor to submit performance curves and technical catalog of the proposed model for review & information)					
	The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head.					
1.1	Domestic: Capacity : 920 LPM Each Pump ( 2 Working + 1 Standby) @ 70 M head.	Set	1			
1.2	Flushing: Capacity : 670 LPM Each Pump ( 2 Working + 1 Standby) @ 70 M head.	Set	1			
2	Supply, assembly, erection, testing and commissioning of pumping system comprising the following:					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Vertical/Horizontal centrifugal pumps (1 Working + 1 Stand-by) with mechanical seal, SS Volute casing and SS impeller connected to suitable capacity TEFC induction motor suitable for 415 ± 10 % volts, 3 phase, 50 cycles A.C. supply with 100 mm dia. pressure gauges including MS skid and mounting of the pumps on the skid. (Motor to be of the same make as the pump)					
2.1	Pump Capacity 500 lpm, at 30 m head (1 Working + 1 Stand-by)	Set	1			
	(Pumps for boosting water supply from UG Flushing water tank for Garden Hydrant System)					
<b>3</b>	Supply, assembly, erection, testing and commissioning of SS submersible non-clog pumps, suitable to handle basement drainage having the following capacities with vortex impeller / grinder type, complete with 3 phase squirrel cage submersible motor of required HP for 415 + 10% volts, 3 phase, 50 Hz. A.C. supply cooled by surrounding liquid, submersible cable upto main panel within the plant room, dry running preventor, G.I. guide pulling chain, all the necessary piping and accessories, valves, delivery header and magnetic switch based automatic level controller etc. as required complete in all respects. The rate will include electrical panel with cyclic operation as supplied by the manufacturers)					
	The above installation shall be complete with sump pump lifting assembly, ready made electro – galvanized MS lifting chain, GI pipe header complete with discharge manifold, flanges, tee, elbow etc. complete including GI pipe upto the top of sump and including GI union. Header shall be sized for both pump working under delivery velocity of 1.5 m/sec.					
3.1	Capacity of 250 lpm against a total head of 15m (solid handling 10-12 mm) (Basement Drainage) (1 Working + 1 Stand by)	Set	16			
3.2	Capacity of 500 lpm against a total head of 8m (solid handling 10-12 mm) (Pump Room Drainage and Pumps Rain Water Harvesting Pits) (1 Working + 1 Stand by)	Set	7			
3.3	Capacity of 1000 lpm against a total head of 15m (solid handling 10-12 mm) (Hot water from Laundry Sump) (1 Working + 1 Stand by)	Set	1			
<b>4</b>	<b>FILTER FEED PUMPS</b>					
	Supply, assembly, erection, testing and commissioning of pumping system comprising the following:					
	Vertical/Horizontal centrifugal pumps (1 Working + 1 Stand-by) with mechanical seal, SS Volute casing and SS impeller connected to suitable capacity TEFC induction motor suitable for 415 ± 10 % volts, 3 phase, 50 cycles A.C. supply with 100 mm dia. pressure gauges including MS skid and mounting of the pumps on the skid. (Motor to be of the same make as the pump)					
4.1	Pump Capacity 700 lpm, at 30 m head (2 Working + 1 Stand-by) <b>(Domestic)</b>	Set	1			
4.2	Pump Capacity 400 lpm, at 30 m head (1 Working + 1 Stand-by) <b>(Softening Plant)</b>	Set	1			
<b>5</b>	<b>MULTIGRADE SAND FILTER (Domestic)</b>					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Supply, assembly, erection, testing & commissioning of vertical M.S.dual media pressure filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media (Coarse silex 6-10 mm, 150 mm depth, Fine silex 1.4-2.5 mm depth 600 mm, manganese green sand 150 mm, Anthracite 0.8-1.6mm, 600 mm thick), face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm)					
a)	Capacity : 40000 lph					
b)	Filtration rate : 18-20 M <sup>3</sup> /M <sup>2</sup> /hr					
c)	Max. operating pressure : 3.5 Kg/Sq.cm					
d)	Test pressure : 5.5 Kg/Sq.cm					
e)	Minimum Size : 1.5 Mtr. Dia & 2.0 Mtr. Height	Set	2			
<b>6</b>	<b>ACTIVATED CARBON FILTER (Domestic)</b>					
	Supply, assembly, erection, testing & commissioning of vertical M.S. Activated Carbon filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media activated carbon, face piping (GI, C Class), diaphragm/ ball/ non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm)					
a)	Capacity : 40000 lph					
b)	Filtration rate : 15-17 M <sup>3</sup> /M <sup>2</sup> /hr					
c)	Max. operating pressure : 3.5 kg/Sq.cm					
d)	Test pressure : 5.5 Kg/Sq.cm					
e)	Minimum Size : 1.5 Mtr. Dia & 2.0 Mtr. Height	Set	2			
<b>7</b>	<b>MULTIGRADE SAND FILTER (Softening Plant)</b>					
	Supply, assembly, erection, testing & commissioning of vertical M.S.dual media pressure filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media (Coarse silex 6-10 mm, 150 mm depth, Fine silex 1.4-2.5 mm depth 600 mm, manganese green sand 150 mm, Anthracite 0.8-1.6mm, 600 mm thick), face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm)					
a)	Capacity : 23000 lph					
b)	Filtration rate : 18-20 M <sup>3</sup> /M <sup>2</sup> /hr					
c)	Max. operating pressure : 3.5 Kg/Sq.cm					
d)	Test pressure : 5.5 Kg/Sq.cm					
e)	Minimum Size : 1.2 Mtr. Dia & 1.8 Mtr. Height	Set	1			
<b>8</b>	<b>WATER SOFTENER</b>					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Supply, assembly, erection, testing & commissioning of vertical M.S.dual media pressure filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of softening resin, complete with pressure gauges at inlet & outlet, face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete with initial charge of media for softener with cation exchange resin, brine tank, lining inside with PP and FRP wounded outside, testing and commissioning complete (Tested to 10 kg/sq cm).					
a)	<u>Hardness</u>					
i)	Inlet : 500 PPM					
ii)	Outlet : Commercial zero (<5PPM)					
b)	Capacity : 23000 lph					
c)	Regeneration Period : 12.00 hrs.					
d)	OBR (Out put between regeneration) : 226.8 M <sup>3</sup>					
e)	Operating pressure : 3.5 kg/Sq.cm					
f)	Test pressure : 5.5 Kg/Sq.cm	Set	1			
<b>9</b>	Supplying, assembly, erection, testing and commissioning of magnetic level sensors and controllers, CPVC probe tube, PP actuating float and all other equipment required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control junction box near the UG tank to probes of required length, interconnection wiring between level controller and the concerned contactor in the starter panel as required. The level controller will perform the following functions.	Set	1			
a)	To switch on the pumps (3 nos. tube well pumps, filter pumps, softening plant pumps) when the level of water in the supply water tank is low and to cut off the pump when the level in the receiving water tank is high and switch off the pumps when the level of water in the supply water tank is low.					
b)	To indicate 5 levels of water in all tanks through a control panel with LEDs					
c)	To start the pumps in a cyclic order.					
	The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks.					
<b>10</b>	Providing & fixing Electric control panel to open / close the solenoid valve at low / high water level through level controller in OH water tanks including armoured cabling, level controller probes & other accessories as required to operate the system automatically complete in all respects. (Equal to the no. of OHTs)	Set	22			
<b>11</b>	Supplying, Installation, Testing and Commissioning of Motorized Ball/Butterfly Valve of following sizes with Bypass Ball/Butterfly Valve arrangement and Isolating Valve with weather proof MS powder coated enclosure, complete in all respects as required.					
11.1	80 mm dia	Set	4			
11.2	65 mm dia	Set	6			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
11.3	50 mm dia	Set	7			
11.4	40 mm dia	Set	4			
11.5	32 mm dia	Set	1			
<b>12</b>	Providing, fixing, jointing and testing in position the following medium class G.I. pipes conforming to IS:1239 cut to required lengths including all necessary fittings (conforming to IS:1879) and specials such as bends, tees, unions, reducers, flanges & plugs etc. fixing at wall/ceiling level supported by clamps, hangers etc, (to be galvanized after fabrication) cutting hole in wall/floor/slab and making good the same good with cement concrete 1:2:4 / fire sealent complete as required.					
12.1	32 mm dia	RM	50			
12.2	40 mm dia	RM	60			
12.3	50 mm dia	RM	175			
12.4	65 mm dia	RM	150			
12.5	80 mm dia	RM	90			
12.6	100 mm dia	RM	100			
12.7	150 mm dia	RM	75			
12.8	200 mm dia	RM	50			
<b>13</b>	Providing two coats of Synthetic enamel paint of approved shade on pipes and supports as per pipe colour code over a coat of primer. Including painting of legends with direction arrow as per the approval of the Consultants / Project Manager.					
13.1	32 mm dia	RM	50			
13.2	40 mm dia	RM	60			
13.3	50 mm dia	RM	175			
13.4	65 mm dia	RM	150			
13.5	80 mm dia	RM	90			
13.6	100 mm dia	RM	100			
13.7	150 mm dia	RM	75			
13.8	250 mm dia	RM	50			
<b>14</b>	Supply, installation, testing and commissioning of tanker inlet connection complete with 80 mm dia GI inlet piping, hose inlet connection, MS cabinet enclosure (epoxy painted after fabrication), pad locking arrangement, inlet flexible hose complete with all necessary arrangement.	No.	1			
<b>15</b>	Supply, installation, testing and commissioning of ultraviolet disinfection unit. The unit shall have over 99.9% bacterial reduction from inlet to outlet. The disinfection chamber shall be constructed of SS 316L on all welded parts. The UV lamp shall be of low pressure mercury vapour type with hard glass enclosure, the sockets shall be water tight & vibration resistant. The lamp life shall be rated for 6000 hours.					
	The access to the UV lamp shall be without the need to interrupt the ballast circuit. The unit shall be provided with elapsed running time meter, non resettable to 99,999 hours. Cost shall be inclusive of electrical wiring with plug.					
15.1	Flow rate 40000 Litre/Hr	Set	1			
<b>16</b>	Providing and fixing Butter fly valve Rated for PN16 pressure rating including rubber gasket, flanges, nuts, bolts, washers & painting complete as required.					
16.1	50 mm dia	Nos	14			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
16.2	65 mm dia	Nos	12			
16.3	80 mm dia	Nos	25			
16.4	100 mm dia	Nos	9			
16.5	150 mm dia	Nos	4			
16.6	200 mm dia	Nos	2			
<b>17</b>	Providing & fixing C.I. dual plate type check valve tested to a pressure of 15Kg/sqcm. Including rubber gasket, flanges, union, nuts, bolts, washers & painting complete as required.					
17.1	50 mm dia	Nos	8			
17.2	65 mm dia	Nos	12			
17.3	80 mm dia	Nos	14			
17.4	100 mm dia	Nos	4			
<b>18</b>	Providing & fixing C.I. 'Y' Strainer (screwed / flanged) with stainless steel fine wire mesh perforated sheet basket with necessary flanges / union nuts, bolts & washers complete as required (on pump suction).					
18.1	50 mm dia	Nos	6			
18.2	65 mm dia	Nos	6			
18.3	80 mm dia	Nos	6			
18.4	100 mm dia	Nos	3			
<b>19</b>	Providing and fixing in position of approved quality G.M. float valve with copper ball float and brass rods of required length suitable for pressure of 10 Kg/sqcm of the following sizes:					
19.1	50 mm dia	No.	1			
<b>20</b>	<b>WATER SUPPLY PUMP PANEL</b>					
	Supplying, Installation, Testing and Commissioning of dust and vermin proof wall mounting type factory built sheet steel enclosed cubical panel, fabricated out of 2.0mm thick CRCA sheet, hinged doors of 2mm thick CRCA sheet, duly painted complete with Aluminium bus bars, inter-connection with solid copper conductor wires / aluminium strips, neutral links, earth bus etc. necessary metering protections & indications and mounted with the following as per specification attached as required.					
	<b>INCOMING</b>					
a)	400A, 4P, 35 kA rating MCCB - 01 No.					
b)	Four strip 500 Amps Aluminium bus bar - 01 Set					
c)	(0 - 400 A) CT operated Ammeter with selector switch & 3 nos. CTs ratio 400/5A 15VA burden & accuracy class of 1.0 - 1 set					
d)	(0 -500V) voltmeter with selector switch - 1 Set					
e)	Coloured LED (Red, Yellow, Blue) phase indicating lamps with 2 Amps. control MCBs.- 1 Set of 3 Nos.					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>OUTGOING</b>						
a)	160A, TPN, 25 kA MCCB along with CT operated Ammeter (0-160A), set of 3 CTs of 160A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 2 Nos.					
b)	100A, TPN, 25 kA MCCB along with CT operated Ammeter (0-100A), set of 3 CTs of 100A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 1 No.					
c)	63A, TP, 10 kA MCB along with CT operated Ammeter (0-60A), set of 3 CTs of 60A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 6 Nos.					
d)	40A, TP, 10 kA MCB along with CT operated Ammeter (0-40A), set of 3 CTs of 40A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 3 Nos.					
e)	Star Delta starter suitable for 7.5 KW motor (With SPPR, Relay, metering & indication etc.) - 5 Sets					
f)	DOL starter suitable for 5 KW motor (With SPPR, Relay, metering & indication etc.) - 2 Sets	Set	1			
<b>21</b>	<b>PERFORATED M.S.CABLE TRAY</b>					
	Fabricating and installing following size 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 M.S. suspenders and including painting etc. as required.					
21.1	300 mm width x 50 mm depth x 1.6 mm thickness	Mtrs.	100			
21.2	150 mm width x 50 mm depth x 1.6 mm thickness	Mtrs.	200			
<b>22</b>	<b>POWER CABLES (ALUMINIUM)</b>					
	Supply, laying, fixing, testing, commissioning and end termination of following sizes of XLPE insulated PVC sheathed, armoured aluminium conductor cable of 1.1 KV grade on existing cable tray / surface as required.					
22.1	3½ core x 300 sqmm	Mtrs.	100			
22.2	3½ core x 50 sqmm	Mtrs.	50			
22.3	3½ core x 35 sqmm	Mtrs.	50			
22.4	4 core x 25 sqmm	Mtrs.	50			
22.5	4 core x 6 sqmm	Mtrs.	50			
22.6	3 core x 10 sqmm	Mtrs.	50			
22.7	3 core x 6 sqmm	Mtrs.	150			
22.8	3 core x 4 sqmm	Mtrs.	50			
<b>23</b>	<b>GI EARTH STRIP</b>					
	Providing and fixing 25mm x 5mm G.I. strip on surface or in recess for connections etc. as required.	Mtrs.	100			
<b>24</b>	<b>GI EARTH WIRE</b>					
	Providing and fixing 6 SWG G.I. Wire on surface or in recess for loop earthing along with the existing cable as required.	Mtrs.	200			
<b>SUB TOTAL</b>						



S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - VIII - HOT WATER SYSTEM EQUIPMENT</b>					
<b>1</b>	<b><u>H.S.D. Hot Water Generator</u></b>					
	Supply, installation, testing and commissioning of Horizontal HSD fired Hot Water Generators (Non IBR Type) rated for delivery of heat output as mentioned below. The hot water generator unit shall be complete with the following:					
i)	Shell and coil assembly with necessary refractory.					
ii)	Blower with damper					
iii)	Fuel Pump					
iv)	Automatic burner control facility					
v)	Fittings like oil filter, safety valve, pressure switches, flue gas sampling point, pressure gauges, temperature gauges etc.					
vi)	Electric control panel suitable for 3 Phase 415 V, 50 Hz. Electric supply and filled with digital temperature display.					
vii)	All interconnecting power and control cabling between panel and various components.					
viii)	Mounting arrangements					
ix)	Guaranteed minimum 90% efficiency					
	a) Heat Output - 300000 K. Cal/Hr.	Sets	2			
	(Quoted price to include cost of insulation and aluminium cladding as per technical specifications).					
<b>2</b>	<b><u>Hot Water Mixing Tank (Pump Room)</u></b>					
	Supply, installation, testing & commissioning of SS-304 horizontal hot water mixing tank (Capacity 10000 Lts.) suitable for minimum 10 Kg / Sqm operating pressure including copper coils as required. Tank shall be provided with hot water flow meter at inlet & outlet (approved by department of weights and measures), inlet / outlet, overflow / drain connection with MH cover (550 mm I.D.) (Non Magnetic), pressure relief valves, pressure gauge at inlet / outlet. All the valves & accessories shall be suitable for an operating pressure of 10 Kg/sq.cm. Tank shall be mounted on 450 mm high steel structural supports with access ladder.	Job	2			
	Tank shall be insulated as per specification, including 24 gauge aluminium cladding. Tank shall have 15 mm dia testing spout with valve (inlet temperature to hot water storage tank 85 deg. C). The flanges shall be machined from SS304 sheets with dimensions confirming to AN SI, B 16.5 No. shall be fabricated as per unfired pressure vessel code SI 2825-1969, IS 226 / IS 2062).					
2.1	Insulation as per specification for hot water mixing tank complete with MS supporting structure with access ladder duly paint with red oxide - 1 No.					
2.2	Cold Water inlet 150 mm dia P16 Butterfly Valve - 1 No.					
2.3	Cold Water inlet 150 mm dia Check Valve - 1 No.					
2.4	Hot Water inlet / outlet - 1 No.					
2.4.1	150 mm dia PN16 Butterfly Valve - 1 No.					
2.4.2	100 mm dia PN16 Butterfly Valve - 1 No.					
2.4.3	80 mm dia PN16 Butterfly Valve - 1 No.					
2.5	Hot Water outlet connection to system - 1 No.					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
2.5.1	150 mm dia PN16 Butterfly Valve - 1 No.					
2.5.2	100 mm dia PN16 Butterfly Valve - 1 No.					
2.5.3	Spare 80 mm dia PN16 Butterfly Valve - 1 No.					
2.5.4	Spare outlet 50 mm dia PN16 Butterfly Valve - 1 No.					
2.6	Hot water return inlet 100 mm dia Flanged Bronze Globe Valve - 1 No.					
2.7	Tank Drain connection 65 mm PN16 Butterfly Valve - 1 No.					
2.8	Controller panel including Temperature sensor at mixing tank suitable for differential temperature setting shall be made for start / stop of the HWG and other for automatic integration of HWG s. The control / system shall be complete with necessary cabling / wiring along with support. - 1 No.					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>3</b>	<b>Soft Feed Tank for Hot Water Generator (Pump Room)</b>					
	Supply, installation, testing & commissioning a 6mm thick M.S soft water boiler feed tank of 2000 ltrs. Capacity complete with inlets/ outlets, overflow/ drain, high / low level probe inlet socket (threaded) and vent connections with flanges including valves, side mounting type glass level indicator alongwith accessories and 600mm dia manhole with bolted cover and MS supporting structure with access ladder duly paint with red oxide as per specifications, complete in all respect as given below:	Job	1			
3.1	MS soft water tank complete with 3.5 m high MS structured support with 450 mm dia wide platform for accessibility.					
3.2	Soft water inlet connect with inlet valve 32 mm dia (Bronze Gate Valve with Forged Brass Stem).					
3.3	Hot Water Generator feed line 50 mm dia PN16 Ball Valve.					
3.4	Glass level indicator along with accessories					
3.5	Drain line valve 40 mm dia (Bronze Gate Valve with Forged Brass Stem).					
	Note: The internal surface of the tank shall be coated with heat resistant aluminium paint and external surface with two coats of red oxide and finished with two coats of heat resistant black primer of approved make.					
<b>4</b>	<b>Pumps (Pump Room)</b>					
	Providing, installation, testing and commissioning of following insulated pumps suitable for 415 Volts connected with TEFC induction motor, electric starter, M.S. channel, base plate complete with vibration isolators, isolating valve on suction and discharge, non return valve on discharge, pressure gauges with stop cock and dial type thermometer on suction or discharge, butterfly valves, globe valves, strainers etc. as required and insulated. The pump shall have mechanical seal. The pump shall be SS Construction (suitable for hot water 85°C ). The cost will include the cost of starter and automatic control panel for all the pumps.					
4.1	Primary Pumps					
	20000 LPH x 15 MTS HEAD	Nos	2			
4.2	Hot Water Supply Pumps					
	30000 LPH x 40 MTS HEAD	Nos.	2			
<b>5</b>	<b>SOLAR HOT WATER SYSTEM (Hospital)</b>					
	Providing and fixing Solar Hot Water indirect Heating System using approved type of heating liquid medium comprising of flat plate solar panels, including all interconnecting insulated G.I. piping, primary and secondary recirculation pumps, pressure type insulated hot water tank, sacrificial magnesium anode with steel core including valves on inlet, outlet, Y stainer and a water meter on the inlet, air release valve all mounted on galvanized MS sections complete with connection with the existing piping.					
a)	Flat plate solar collector panels of 2 x 1 m size approx. (nos. as specified below) the panels enclosed in insulated collector boxes with single piece toughned glass 4 mm thick and fixed with heat resistant gasket.					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
b)	Integrated calorifier tank designed so as to have a Insulated M.S Horizontal tank (cap as specified below) suitable for 5 kg/cm <sup>2</sup> operating pressure with Built in Heat exchanger coil of copper of suitable grade of required area for boiler feed water and for solar feed water. Tank shall be provided with hot water inlet / outlet over flow/ drain connection with M H cover. Vent pipe connection & GI Vent pipe of adequate height / length, pressure gauge at inlet/ outlet. All the valves & accessories shall be suitable for an operating pressure of 4.0kg/sqm tank.					
c)	Primary circulation pump-two nos.(one working + one standby) for circulation of fluid from Solar panels to calorifier. The system will include the temperature sensors and automatic control panel.					
d)	Inter-connected insulated G.I. piping insulated with 9 mm thick nitrile rubber heat resitant insulation sections ( Vidoflex or equiv.) and valves with outer mechanical protection of aluminium sheet cladding.					
e)	Electrical Panels					
	Switch board cubicle, fabricated from 16 gauge M.S. Sheet with dust and vermin proof construction, powder coated in approved shade. All switchgear will be identified with etched plastic identification plates for each motor. The panel shall be wired with colour coded wiring. (All interconnecting wiring/cabling panel to motors, fuses, MCB, off/on indicating lights, bus bars, switch gears and accessories as required.					
	<b>(NOTES: All interconnecting piping &amp; valves with insullation, all wiring between panels, tanks &amp; pumps is to included)</b>					
<b>A</b>	<b>A &amp; E Block</b>	Sets	2			
	51 Solar Collector Panels					
	3500 liters Hot Water Calorifier					
<b>B</b>	<b>Oncology Block</b>	Set	1			
	12 Solar Collector Panels					
	500 liters Hot Water Calorifier					
<b>C</b>	<b>OPD Block</b>	Sets	2			
	7 Solar Collector Panels					
	500 liters Hot Water Calorifier					
<b>D</b>	<b>IPD Block</b>	Sets	2			
	45 Solar Collector Panels					
	3000 liters Hot Water Calorifier					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>6</b>	<b>SOLAR HOT WATER SYSTEM (Academic Block, Hostels and Dining)</b>					
	Providing and fixing Solar Hot Water indirect Heating System using approved type of heating liquid medium comprising of flat plate solar panels, including all interconnecting insulated G.I. piping, primary and secondary recirculation pumps, pressure type insulated hot water tank, sacrificial magnesium anode with steel core including valves on inlet, outlet, Y stainer and a water meter on the inlet, air release valve all mounted on galvanized MS sections complete with connection with the existing piping.					
a)	Flat plate solar collector panels of 2 x 1 m size approx. (nos. as specified below) the panels enclosed in insulated collector boxes with single piece toughned glass 4 mm thick and fixed with heat resistant gasket.					
b)	Integrated calorifier tank designed so as to have a Insulated M.S Horizontal tank (cap as specified below) with electrical backup suitable for 5 kg/cm <sup>2</sup> operating pressure with Built in Heat exchanger coil of copper of suitable grade of required area for solar feed water. Tank shall be provided with hot water inlet / outlet over flow/ drain connection with M H cover. Vent pipe connection & GI Vent pipe of adequate height / length, pressure gauge at inlet/ outlet. All the valves & accessories shall be suitable for an operating pressure of 4.0kg/sqm tank.					
c)	Primary circulation pump-two nos.(one working + one standby) for circulation of fluid from Solar panels to calorifier. The system will include the temperature sensors and automatic control panel.					
d)	Inter-connected insulated G.I. piping insulated with 9 mm thick nitrile rubber heat resistant insulation sections ( Vidoflex or equiv.) and valves with outer mechanical protection of aluminium sheet cladding.					
e)	Electrical Panels Switch board cubicle, fabricated from 16 gauge M.S. Sheet with dust and vermin proof construction, powder coated in approved shade. All switchgear will be identified with etched plastic identification plates for each motor. The panel shall be wired with colour coded wiring. (All interconnecting wiring/cabling panel to motors, fuses, MCB, off/on indicating lights, bus bars, switch gears and accessories as required.					
	<b>(NOTES: All interconnecting piping &amp; valves with insullation, all wiring between panels, tanks &amp; pumps is to included)</b>					
<b>A</b>	<b>Academic Block</b>	Sets	1			
	20 Solar Collector Panels					
	1000 liters Hot Water Tank with 12 KW Elctrical Backup					
<b>B</b>	<b>Hostel</b>	Set	2			
	24 Solar Collector Panels					
	3000 liters Hot Water Tank with with 60 KW Elctrical Backup					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
<b>C</b>	<b>Dining</b>	Set	1			
	10 Solar Collector Panels					
	500 liters Hot Water Tank with with no Elctrical Backup					
<b>7</b>	<b>Hot Water Plant Room Piping</b>					
7.1	Providing, jointing, testing and commissioning of following sizes of ERW heavy class MS pipes (including headers)) conforming to IS-1239 complete with rockwool section insulation of 144 Kg / cu-m density & 24 G aluminium cladding with all accessories like all fittings including tees, elbows, reducers, union, flanges, rubber gaskets, washer including galvanized supporting / fixing the pipe on floor / wall / ceiling with clamps, hangers (using anchor fastners) as per specification. All hangers, clamps, brackets etc. shall be of galvanized iron and floor supports with vertical pipes unless specified otherwise. Cost shall be inclusive of providing roller / slide support, expansion loops and wooden brackets / blocks for insulated pipes.					
7.1.1	25 mm dia	Mtrs	25			
7.1.2	50 mm dia	Mtrs	75			
7.1.3	65 mm dia	Mtrs	90			
7.1.4	80 mm dia	Mtrs	75			
7.1.5	100 mm dia	Mtrs	120			
7.1.6	150 mm dia	Mtrs	45			
7.2	Providing and fixing of safety valve on hot water line					
7.2.1	50 mm dia	No.	5			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - IX - EFFLUENT TREATMENT PLANT FOR LAUNDRY CAPACITY 65 KLD</b>					
	<b>EFFLUENT TREATMENT PLANT</b>					
1	Supplying, installing, testing & commissioning of 65 KLD Effluent Treatment Plant for the following duty (The Plant shall be complete with a central Electrical Power and Control panel fully pre/site wired and with all power and control cables to all pumps and equipment including all instrumentation, level and other controls)					
	Effluent treatment plant shall include the supply, installation, testing and commissioning of the following items: The Shop drawing of ETP shall be prepared by executing agency approved by HSCC before start of work. ETP will be continuous type working 10hr a day @ 65KLD and also include getting approval from state pollution control board (DPCC) & adequacy report after commissioning the ETP from one of DPCC approved agency.					
	Supply Installation, Testing & Commissioning of MS FRP Fabricated Tanks of the following capacities with 5mm (minimum thick MS Sheet) & MS structure all the RCC structure shall be paid separately under civil head & MS supporting structure will be paid under steel head .					
a)	RCC Collection Tank (Volume : 30 cumtr Effective) Including the necessary Bar Screen Chamber & Oil & Grease Traps. - 1 No.(excluding civil cost)					
b)	Reaction Tank flash mixer, flocculator, chemical dosing tanks & dosing pumps (4 Nos min) for each chemicals - 1 No.(excluding civil cost)					
c)	Tube Settler (Volume : 26 KL Effective) - 1 No. will hydraulic loading 2.0cum/sqm/hr (minimum).					
d)	RCC Sludge Holding Tank :(Volume : 15 KL effective) - 1 No.(excluding civil cost)					
e)	RCC Filter Feed Tank (Volume 100 KL Effective) (excluding civil cost)	Set	1			
2	SS Bar screens : 600 x 500 SS 304	Each	2			
3	Non clogging type submersible pumps capable of handling solids up to 25 mm having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) to control the level of sump automatically. Pumps shall have following duty: (Make : JS/Salmson/Grundfos)					
a)	Raw Effluent Transfer Pumps					
	Flow rate (each) = 6500 lph					
	Head = 8 - 10 Mtr.					
	Qty = 2 Nos. (1W/1S)	Set	1			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
4	Non clogging type centrifugal pumps capable of handling solids up to 8 mm having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) to control the level of sump automatically. Pumps shall have following duty: (Make : Kirloskar)					
a)	Sludge Lifting Pumps					
	Flow rate (each) = 5000 lph					
	Head = 8 - 10 Mtr					
	Quantity = 2 Nos. (1W/1S)	Set	1			
5	Providing & Fixing Non clogging type screw pump capable of handling solids up to 8 mm having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) to control the level of sump automatically. Pumps shall have following duty: (Make : Positive / Roto / Rotomac)					
a)	Filter Press Feed Pump					
	Flow rate (each) = 500 lph					
	Head = 25 to 30 Mtr					
	Quantity = 2 Nos. (1W/1S)	Set	1			
6	Air diffusion system shall include the following:					
a)	2 Nos. (one working & one standby) Twin Lobe Air Blowers capable of delivering 75 m3 of free air each at 5000 MMWG driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of suitable HP suitable for 415 ± 10% volts, 3 phase, 50 cycles A.C. supply (Make Everest / Beta )					
	- 1 Set.	Set	1			
b.	Mild Steel (MS)(heavy Class) piping conforming to IS:1239-1982 complete with mild steel fittings @ brand such as tees, crosses, plugs, sockets, elbows, reducers, supports & clamps, (Air piping). -	Set	1			
c.	Non clog type air dispersion system capable of handling 3-5 cfm of air with oxygen transfer efficiency of 3-4% per/meter water depth. Air dispersion grid shall be assembled in modular form so that they can be replaced/ repaired easily from platform at the top.					
	Air dispersion system shall be provided for sewage sump, Aerobic digester cum Thickener & Aeration Tank.	Set	1			
d.	Flexible pipes conforming to IS:1239- 1982 complete with stainless steel fittings such as tees, crosses, plugs, sockets, elbows, reducers, supports & clamps, puddle flanges etc cutting chases & making good for submerged air piping.	Set	1			
7	Centrifugal pumps having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) Pumps shall have following duty: (Make : Kirloskar)	Lot	1			



S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Mild Steel (MS)(heavy Class) Piping conforming to IS:1239-1982 complete with mild steel fittings @ brand such as tees, crosses, plugs, sockets, elbows, reducers, supports & clamps, (Liquid piping). - (Make : Jindal / Prakash)					
8	Supply Installation, testing & commissioning of Filter Press having 18 Nos Plates of Size 18" x 18" (Manual Closing) (Make : Pharmatech / Hydropress)	Set	1			
9	<b>Instrumentation</b>					
	Energy Meter - 1 No.					
	Bulk Meter - 1 No.					
	Pressure Guages - 2 Nos.	Lot	1			
10	<b>Electrical Panel</b>					
	Supply Installation, testing & commissioning of Electrical Panel suitable for 415 V, 3 Phase, 4 wires, 50Hz power distribution system. The panel shall be free standing floor / wall mounted, sheet metal enclosed flush front dust & venim proof with Aluminium bus bars. The painting shall be done as per relevant ISI codes as specified. Adequate size cable alley shall be provided for each cable bending & termination. (All components would be L&T/Schnieder /GE).	Set	1			
11	Providing & Fixing Complete wiring and cables for the above equipments	Lot	1			
<b>SUB TOTAL</b>						

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	<b>SUB HEAD - X - SEWAGE TREATMENT PLANT CAPACITY 825 KL</b>					
<b>1</b>	<b>SEWAGE TREATMENT PLANT</b>					
	Planning, Designing, Detailing, Supplying, Erection, Testing and Commissioning of Package Sewage treatment plant based on FAB (Fluidised aerobic Bioreactor) technology of average flow rate of 825 cu.m/day for sewer and treated effluent of ETP of hospital of LHMC Delhi including provision of recirculation of treated sewage/effluent for the use of horticulture/flushing purposes including design and execution of all civil, structural, electrical, mechanical, plumbing and processing, ancillary equipments and works etc required to complete the package, getting approval from state pollution control board and other statutory bodies as well as from consultant (HSCC) excluding the cost of civil work (i.e civil work of inlet chamber, oil & grease trap, Bar Screen chamber, equalisation tank, Fabb reaction tanks, Tube settler tank, sludge chamber, filter feed tank, sludge drying bed, treated water tank, sludge drying bed, equipment room /lab/office etc. same shall be covered under head civil work).					
	<b>Note:</b> Tentative raw sewage generation & characteristics for designing of the plant are mentioned below. The bidder has to take this own judgment for designing the system					
	Average daily flow (cum/day) : 825 CuM per day					
	pH : 5.5 - 8.5					
	BOD (5 days at 20 degree C) (mg/l) : 150-400					
	COD (mg/l) : 250-600					
	Suspended solids (mg/l): 200-400					
	Oil & grease (mg/l) :20-50					
	The treated effluent characteristics shall be as per local pollution control board standards. The treated effluent (indicative) shall have following standard:-					
	BOD : Less than 10 Mg/l					
	COD : Less than 100 mg/l					
	Suspended solids: Less than 10 mg/l					
	Oil & grease : Less than 10 mg/l					
	pH : 6.5 - 8.0					
	Bio-assay test : Survival of fish after 96 hrs 100 %					
	Odor-Odorless					
	On the basis of the above and as per site condition the detailed drawing along with design calculation (Hydraulics, process, Structure etc.) shall be submitted to HSCC for the approval of the same before the start of the work The STPhas to be designed and installed by the approved vendor (Geo Miller, Ion Exchange, Fontus, Thermax, Pollucon Technologies, AKAR Implex (P) Ltd., KWAN Environmental solution). To have flexibility in O&M and to minimize the operation cost during lean flow or when the occupancy of the campus is low, the plant shall be designed in such a way that half portion of plant can be closed for O & M without disturbing the operation of another half portion of STP.					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	All the water retaining structure shall be designed as water retaining structure as per provision of IS code and water proofing with fixed or any other approved chemical shall be carried out by approved agency with 10 year (minimum) garanty. All the unit shall be painted by epoxy or any other approved paints.					
i)	The shop drawings & design of STP shall be prepared by the agency .The process and hydraulic design & shop drawing will be approved by HSCC.The structure design shall be carried as per provision of IS code.The agency has to get their structure drawing checked and approved by IIT Delhi/Mumbai/NITE or any other govt. Engineering college approved by HSCC.	Job	1			
ii)	RCC Suitable size <b>Bar Screen chamber</b> with minimum free board 300 mm and minimum size 1.0mx0.9m and suitable size SS Bar screen is installed at suitable angle at the inlet of raw sewage sump before pumping. The unit shall be designed for peak flow - <b>2 nos.(min.).(Excluding civil cost)</b>					
	Electrical & mechanical	Each	2			
iii)	Providing and fixing non cloged submersible sewage pumping set with CI body, SS impeller and shaft coupled with totally enclosed fan cooled iniduction motor complete with HDPE double flanged/CPVC pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz,1500 rpm A/c supply with control auto start float swich, cable and all fitting complete in all respect.					
	<b>RAW SEWAGE PUMP-( 4 nos min.)(2working + 2 Standbuy)</b>	Each	4			
	Capacity - 21000LPH (min.)					
	Head - 10-18 m					
	Solid handing - 25-50mm					
iv)	RCC <b>Equalisation tank</b> with hydraulic retention time Min.6 Hrs HRT of suitable Size free Board 500 mm,the effluent of equalisation tank is agitated with diffused air that is fed by an air blower, including pipe non-corrosive material and its complete system. <b>(1 unit) (Excluding civil cost)</b>					
	Mechanical & Electrical	Each	1			
v)	RCC <b>FAB-(4 nos. minimum)</b> with minimum 4hr. retention time of each reactor of suitable size with Air grid CPVC pipe material of construction or corrosion resistant material,Air diffusers (fine bubble), HDPE approved make Bio media for each aeration tank with minimum water depth of 3.5 m.(Excluding civil cost)					
	Electrical & mechanical	Each	4			
vi)	<b>ROTARY AIR BLOWERS</b>					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Providing and Installation of Rotary air blowers for air scouring, driver through v-belt or directly coupled through flaxble coupling. Motor shall be of suitable HP for 400-440 volts, 1500RPM, 3 phase, alongwith air filter, non-return valve, safetyvalve, base plate and necessary air piping fittings, valves, flowmeters etc.					
	(Blower capacity and pressure head shall be suitable to meet the requirement of equalisation tank and Bio reactor suitable for average flow rate of effluent of 825cu.m per day)- <b>6 nos.(4working +2 stand by)</b>	Each	6			
vii)	<b>RCC secondary tube settler -2 nos.</b> maximum Hydraulic loading 2.0 cu.m/sq.m/hr and with approved quality media. <b>(2 units) minimum media height 0.7m (Excluding civil cost)</b>					
	Electrical & mechanical	Set	2			
viii)	Providing and fixing of <b>OxiLyte (Mixed Oxidant) Generation System</b> , based on ECA Technology, producing non toxic mixed Oxidant Slution at 1000 ppm of Oxidant Concentration or any other approved disinfection method excepted by HSCC. The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 1200L per day. The system should be supplied complete with appropriate dosing pumps , valves, piping, fittings, chemical dosing tank etc. complete in all respect.	Lot	2			
ix)	RCC <b>supernatant tank</b> /Filter feed tank minimum 100 cu.m capacity <b>(1 unit)</b> with filter feed pumps .(Excluding civil cost)					
a)	<b>FILTER FEED PUMPSSETS</b>					
	Providing and installation vertical on line/ horizontal single/multistage centrifugal monoblock pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled inlduction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eleminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ. A/c supply.					
	Type of pump - Horizontal					
	Capacity - 25000 LPH					
	Head - 30 M					
	<b>Nos.- 2 (min.)</b>	Each	2			
x)	<b>MULTI GRADE FILTER</b>					
	Providing and installation of mild steel pressure vessel ( as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 25cu.m per hour, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of filter media graded sand and internals consisting of strainers fitted on plate for collection. <b>(No. of unit-2)</b>					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
	Dia of vessel -1.3mm (minimum.)					
	Shell thickness -6mm (minimum.)					
	Dish end thickness-8mm (minimum.)					
	Nozzie plate -10mm thick (minimum.)					
	Manhole -450mm	Each	2			
xi)	<b>ACTIVATED CARBON FILTER</b>					
	Providing and installation of mild steel pressure vessel ( as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 25cu.m per hour, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of approved quality activated carbon media. <b>(No. of unit-2)</b>					
	Dia of vessel -1.3m (minimum.)					
	Shell thickness -6mm (minimum.)					
	Dish end thickness-8mm (minimum.)					
	Nozzie plate -10mm thick (minimum.)					
	Manhole -450mm	Each	1			
xii)	<b>RCC sludge sump</b> (40cu.m minimum) and submersible sludge pump set with CI body, SS impeller and shaft coupled with to a totally enclosed fan cooled induction motor complete with HDPED/F pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz. A/c supply with control auto start float switch with return sludge line upto Bioreactor. (Excluding civil cost)					
	<b>SLUDGE PUMP- (2 set minimum)</b>					
	Capacity - 10000 LPH					
	Head - 10 m					
	Solid handing - 10mm (minimum)	Each	2			
xiii)	Providing and fixing 24 plates 750 x 750 mm size <b>filter press</b> - <b>1no.</b> with suitable sludge pump and sludge tank of 2,000 ltrs. (min.) capacity alongwith piping, fittings valve etc. complete in all respects.					
	Filter Press Feed Pump					
	Flow rate (each) = 5000 lph					
	Head = 35 to 40 mtr					
	Quantity = 02 Nos (1w/1s)					
	Solid Handling=10mm	Each	2			
xiv)	Providing and fixing dust and vermine proof cubical type motor control <b>panel centre</b> for the various pumps, blower etc. required. It is fabricated from 2mm thick CRCA sheet with stove enamelled finish and comprising of:Panel should have at least 20% spare feeders.					
a.	One incoming main MCCB of required capacity suitable rating					
b.	MCCB/MPCB, one for each motor					

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
c.	Fully automatic DOL/star delta starters suitable for different motors/pumps used in the ETP.Upto 7.5 HP DOL may be used and above star/delta starter used with push buttons one for each motor and on/off indicating neon lamps.					
d.	Single phasing preventors of appropriate rating for each motor.					
e.	rotary type selector switch					
f.	Panel type ampere meters, one for each motor shall be with rotary selector switch to monitor line currents.					
g.	Panel type volt meters, on incoming main with rotary selecting switch to monitor voltage between phase to neutral and phase to phase.					
h.	Neon phase indicating lamps and indicating lamp for each motor on incoming mains.					
i.	Rotary switch for manual or auto operation for each pump					
j.	Fully taped separate aluminium bus bar of required capacity for normal and emergency supply.					
k.	The panel shall be pre-wired with coded wiring. All intercnnting wiring from incoming main to switchgear, meters and accessories within the switchboard panel shall have suitable copper ferrules					
l.	<b>Electrical works</b> (including supply, installation and termination of cables of suitable size as per HP of all pumps with all structural supports, clamps and cable trays as per approved design/specifications,installation will be as per relevant Indian standard and CPWD specification alongwith control cable of suitable size).(1 lot). Any other electrical and mechanical item required to complete the work.	Set	1			
xv)	Providing and fixing lab. Equipments including digital type pH meter, COD kit, TDS kit, beaker, conical flask ,digital type flow metre ,pressure metre ,pressure guage ,level controller etc. complete in all respects. <b>(1 set)</b>	Set	1			
xvi)	<b>Sludge drying beds</b> (5.0X10.0X1.8) suitable Nos (minimum size) (complete civil & mechanical work) excluding civil cost.	Set	1			

S. No.	Description of Item	Unit	Total Qty	Rate in Fig (Rs)	Rate in Words	Amount in Rs
xvii)	<b>Pump room drainage sump pump for plant room.</b>					
	Non clogging type submercible pumps capable of handling solids up to 25 mm having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) to control the level of sump automatically. Pumps shall have following duty: (Make : JS/Salmson/Grundfos)excluding civil cost.					
	Plant Room Sump Pumps					
	Flow rate (each) = 15000 lph					
	Head = 8-10 Mtr					
	Qty = 02 Nos (1W/1S)	Set	1			
<b>SUB TOTAL</b>						
<b>GRAND TOTAL</b>						

**PROJECT NAME: PROPOSED LADY HARDINGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT DELHI**  
**BILL OF QUANTITIES (FIRE FIGHTING - INTERNAL WORK)**  
**HOSPITAL BLOCK**

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - I - (Wet Riser and Sprinkler System - Pumping Equipments)</b>					
1	Supplying, Installation, Testing and Commissioning of <b>Electric Driven Terrace Pump</b> suitable for auto operation and consisting of following: complete in all respect as required.					
a)	Horizontal type, multistage centrifugal end suction type split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal and flow of 900 lpm at 35 Mtr head confirming to IS:1520.					
b)	Suitable HP (Minimum 12.5 / 15.0 HP) squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, confirming to IS:325.					
c)	M.S. fabricated Common base frame, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation duly plastered with anti vibration pads. etc. complete as per manufacturer's design & standards and as per detailed specifications.		2			
2	Fabricating, Supplying, Installation, Testing and Commissioning <b>Air Vessel</b> of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
2.1	1.2 Meter high and 250 mm dia	Each	29			
	<b>SUB TOTAL</b>					



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - II - (Motor Panels)</b>					
1	Fabrication, Supplying, Installation, Testing & Commissioning of <b>Electrical Motor Control Panel for Terrace Pumps</b> of cubical construction, feeder pillar type double door floor/wall mounted, fabricated out of 2mm. thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with solid aluminium strip / single core PVC Insulated FRLS copper conductor cable, having suitable mountings for switchgears and accessories and internal control & power wiring with suitable rating PVC insulated FRLS copper conductor, earth terminals, numbering etc. complete in all respects, suitable for operation on 415 V, 3 phase 50 HZ AC supply with enclosure protection class IP 42 with suitable rating aluminium bus bar as required.					
	<b>Incoming</b>					
a)	MCCB, 4 Pole, 63 A, 25 KA (with adjustable thermal magnetic release and (ICS = 25 KA upto 433 V) - 1 Nos.					
b)	Digital Ammeter (0 - 60 A),96 mm. sq. CT operated with selector switch with 3 Nos. CT's of ratio 60/5 A, 10 VA burden and accuracy of class 1.0 - 1 Set					
c)	Digital Volt Meter (0-500 V) 96 mm. sq. with selector switch and HRC control fuses - 1 Set.					
d)	Phase Indicating coloured LED (RYB) with control fuses - 1 Set					
	<b>Outgoing</b>					
e)	Fully Automatic Star Delta Starter suitable for Terrace Pump (Minimum 12.5 / 15 HP capacity) complete with over load protection, current sensing type single phase preventer complete with all accessories and wiring etc. as required - 1 Set					
f)	Selector switches for Auto / Manual operation, Local / Remote operation from Fire Pump House / OFF and ON / OFF / TRIP indications - 1 Set		2			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - III - (Hydrants and Sprinklers)</b>					
1	Supplying and Fixing <b>Single Headed Internal Hydrant Valve</b> oblique pattern with instantaneous Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with 80 mm dia flanged inlet, with ABS cap and chain complete with all accessories etc. as required.	Nos.	274			
2	Supply, Installation, Testing and Commissioning 100% synthetic <b>flax canvas</b> Non-percolating FIRE hose (Type A), I.S.I marked 63mm diax15m long with stainless steel male & female couplings (ISI marked) bound & riveted to hose pipes with copper rivets and copper wire as required.		548			
3	Supplying and fixing <b>Gun Metal branch pipe</b> with 20mm dia nozzle conforming to IS:903. suitable for installation connections to hose coupling etc. as required.	Each	274			
4	Supplying and Fixing <b>First Aid Hose Reel</b> , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, conforming to IS 884/1995 with upto date amendments, complete with the following as required.					
(a)	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585					
(b)	25 mm dia gun metal ball valve & nozzle.					
(c)	Drum and brackets for fixing the equipments on wall.					
(d)	Connection from riser with stop valve (gun metal) & M.S. Pipe	Each	274			
5	Providing and fixing Fire hose cabinet with glazed door shutter and frame with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 2100 mm high x 1200 mm wide x 600mm deep with locking arrangement, 4mm thick glass with M.S. flats including all accessories, painting with one coat of steel primer and two coats of postal red enamel paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	Each	274			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
6	Providing, Fixing, Testing and Commissioning of <b>Sprinkler Installation Control Valve</b> of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200 mm dia, as required.	Each	13			
7	Providing and fixing <b>flexible connectors</b> consisting of flexible core 1.5 mtr. in length of corrugated stainless steel tubing under the braid, (Braiding to be SS-304, tubing to be SS-304) for minimum working pressure rating of 200 PSI to be installed at connections from branch pipes to pendant sprinklers blow false ceiling as per specification of the manufacturers.	Each	10784			
8	Providing and Fixing 15 mm dia gunmetal / brass quartzoid type <b>Sprinkler Head</b> with quartz bulb and set to operate at specified temperature.					
8.1	Pendent 68° C, Chrome plated	Each	11212			
8.2	Upright type 68° C, Chrome plated	Each	6195			
8.3	Side wall extended throw 20 mm dia 68 C, Chrome plated	Each	225			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - IV - (Fire Extinguishers)</b>					
<b>1</b>	ABC' stored pressure type Dry Chemical Power (Mono-Ammonium Phosphate) fire extinguisher with fixing hanger, hose, brackets, screws etc. as required					
1.1	10 Kg. DCP / ABC type Fire Extinguishers		99			
<b>2</b>	ISI Marked Portable Chemical Fire Extinguisher, Water (Gas pressure) type capacity 9 liters. with gun-metal cap. and nozzle and complete in all respects including initial fill and wall suspension bracket.		448			
<b>3</b>	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.					
3.1	4.5kg capacity cylinder	Each	448			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - V - (Piping, Valves and Accessories)</b>					
<b>1</b>	Supplying and laying S&S centrifugally cast (spun) / Ductile iron pipes conforming to IS: 8329					
1.1	150 mm dia Ductile Iron class K-9	Meter	575			
<b>2</b>	Providing & Laying D.I. Specials of class K-12 suitable for mechanical jointing as per IS:9523					
2.1	Upto 600 mm dia	quintal	30			
<b>3</b>	Providing push-on-joints to centrifugally (Spun) cast iron pipes of ductile iron pipes including testing of joints and including the cost of rubber gasket					
3.1	150 mm dia Ductile Iron class K-9	joints	243			
<b>4</b>	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener, cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
4.1	150 mm dia (with Flanged joints)	Meter	3944			
4.2	100 mm dia (with Flanged joints)	Meter	2013			
4.3	80 mm dia (with Flanged joints)	Meter	2776			
4.4	65 mm dia	Meter	2815			
4.5	50 mm dia	Meter	2584			
4.6	40 mm dia	Meter	3685			
4.7	32 mm dia	Meter	1438			
4.8	25 mm dia	Meter	22418			
<b>5</b>	Supplying, Installation, Testing and Commissioning of <b>Butterfly valves of PN 1.6</b> rating of following sizes with nitrile Bronze / G.M. seat duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.					
5.1	150 mm dia	Each	157			
5.2	100 mm dia	Each	3			
5.3	50 mm dia	Each	29			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
6	Providing, Installation, Testing and Commissioning of double flanged cast iron <b>Non-Return Valve</b> , PN 1.6 of following sizes confirming to IS : 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.					
6.1	150 mm dia	Each	161			
6.2	50 mm dia	Each	29			
7	Providing, Installation, Testing and Commissioning of <b>forged brass / Gun Metal Ball Valves</b> with brass body chrome plated of following sizes as required.					
7.1	40 mm dia	Each	136			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
8	Supplying and Fixing <b>Orifice Plate</b> made of 6 mm thick, upto 200 mm outer dia. stainless steel with orifice (internal dia.) of required size in between flange & landing valve of external and internal hydrant to reduce pressure to working pressure of 3.5 Kg / cm <sup>2</sup> complete as per specifications as required.	Each	411			
9	Supply, Installation, Testing and Commissioning of 150 mm dia Bourden type, Stainless Steel dial type <b>Pressure Gauge</b> including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm <sup>2</sup> .	Each	403			
10	Supplying, Installation, Testing and Commissioning of CI body flanged (both ends) type serviceable suction / <b>Y strainer</b> with (stainless steel / brass mesh) conforming to relevant IS specifications amended upto date complete including providing and fixing nuts, bolts, washers, gaskets etc. complete as required.					
10.1	80 mm dia		2			
11	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	274			
12	Supplying and Fixing vane type water flow switch with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	Each	137			
<b>SUB TOTAL</b>						

**PROJECT NAME: PROPOSED LADY HARDINGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT DELHI**

**BILL OF QUANTITIES (FIRE FIGHTING - EXTERNAL WORK AND PUMP ROOM)**

**HOSPITAL BLOCK**

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - I - (Wet Riser and Sprinkler System - Pumping Equipments)</b>					
1	Supply, Installation, Testing and Commissioning of <b>Electric Driven Main Fire Pump</b> suitable for auto operation & consisting of following: complete in all respect as required.					
a)	Horizontal Split casing type, centrifugal, multistage, pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5 kg/sq. cm. at highest and farthest outlet at specified flow of 2280 lpm at 88 Mtr. head confirming to IS 1520.					
b)	Suitable HP (Minimum 75 hp) squirrel cage induction motor, TEFC synchronous speed 1500 RPM (with permissible slip), suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 protection for enclosure, horizontal foot mounted type with Class-' F' insulation, confirming to IS-325.					
c)	Common base frame fabricated out of M.S channel of suitable size, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications.	Jobs	2			
2	Supply, Installation, Testing and Commissioning of <b>Diesel Engine Driven Main Fire Pump</b> suitable for auto operation and consisting of following: complete in all respect as required.					



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
a)	Horizontal Split casing type, centrifugal, multistage pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5 kg/sq.cm. at highest and farthest outlet at specified flow of 2280 lpm at 88 Mtr. head confirming to IS 1520.					
b)	Suitable HP(Minimum 72 BHP) 1500 RPM, 4 stroke, cold starting type Diesel Engine with Heat Exchanger confirming to relevant BIS & IS Standards, complete with all required accessories / system , fuel oil filter, lubricant oil pump with filter, 2 Nos. starting batteries of 180 AH capacity each with suitable angle iron stand, engine starting panel having all the controls meters, gauges, tachometer, hour meters, starting switch with keys for manual starting, auto starting mechanism, 24 Volts electric starting equipment, Diesel Tank for 8 hrs continuous running of diesel engine, having minimum capacity of 200 Ltrs. (tank made out of 3mm thick M.S. Sheet with filling Cap, drain Cock, diesel indicator duly mounted on M.S. angle) exhaust pipe of minimum 30 Metre length, duly insulated with 50 mm. thick glass wool with 1.0 mm. thick aluminium sheet cladding, exhaust residential silencer, painted with post office red colour etc. as required.					
c)	M.S. fabricated Common base frame, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications.	Jobs	2			
3	Supplying, Installation, Testing and Commissioning of <b>Electric Driven Pressurization Pump (Jockey Pump)</b> suitable for auto operation and consisting of following: complete in all respects as required.					
a)	Horizontal type, centrifugal end suction type pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal, gland packing and flow of 200 lpm at 88 Mtr. head confirming to IS:1520.					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
b)	Suitable HP (Minimum 15 HP) squirrel cage induction motor TEFC type 2900 RPM suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 class of protection for enclosure, horizontal foot mounted type with Class -'F' insulation, confirming to IS:325.					
c)	Common base frame fabricated out of M.S channel of suitable size, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications.	jobs	2			
4	Fabricating, Supplying, Installation, Testing and Commissioning <b>Air Vessel</b> of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
4.1	2 Meter high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	Each	1			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - II (Motor Control Panels)</b>					
1	Fabrication, Supplying, Installation, Testing & Commissioning of <b>Electrical Motor Control Panel</b> of cubical construction, floor mounted type, fabricated out of 2mm. thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with solid aluminium strip / single core PVC insulated FRLS copper conductor cable, having suitable mountings for switchgears and accessories and internal control & power wiring with suitable rating PVC insulated FRLS copper conductor, earth terminals, numbering etc. complete in all respects, suitable for operation on 415 V, 3 phase 50 HZ AC supply with enclosure protection class IP 42 with 500 Amp aluminium bus bar as required.					
	<b>Incoming</b>					
(i)(a)	MCCB, 4 Pole, 630 A, 35 KA with adjustable thermal magnetic release and (ICS = 35 KA upto 433 V) - 2 No. (Normal Supply)					
	<b>NOTE: - ABOVE 2 BREAKERS INTERLOCKED ELECTRICALLY &amp; MECHANICALLY SO THAT ONE INCOMER BE PUT ON ONLY AT ONE TIME.</b>					
b)	Digital Ammeter (0 - 600 A), 96 mm. sq. CT operated with inbuilt selector switch with 3 Nos. CT's of ratio 600/5 A, 15 VA burden and accuracy of class 1.0 - 2 Sets					
c)	Digital Volt Meter (0-500 V) 96 mm. sq. with inbuilt selector switch and control MCBs - 2 Sets					
d)	Phase Indicating coloured LED (RYB) with control MCBs - 2 Sets					
	<b>Outgoing for Main Fire Pump and Sprinkler Pump</b>					
e)	MCCB 3 Pole, 250 A (with adjustable thermal magnetic release and (ICS = 25 KA upto 433 V), with CT operated digital Ammeter (0 - 250 A), with 3 CT's of 250/5 A, 10 VA, accuracy 1.0, ASS and coloured LED for on/off (Green/Red) indication - 2 Sets					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
f)	Fully Automatic Star Delta Starter suitable for Main Fire Pump and Sprinkler pump (Minimum 75 / 100 HP capacity) complete with over load protection, current sensing type single phase preventer complete with all accessories and wiring etc. as required - 2 Sets					
g)	Selector switches for Auto / Manual operation, Local / Remote / OFF and ON / OFF / TRIP indications - 2 Sets					
	<b>Outgoing for Pressurization Pump</b>					
h)(i)	MCCB 3 Pole, 63 A, 25 KA with CT operated digital Ammeter (0 - 60 A), with 3 CT's of 60/5 A, 10 VA, accuracy 1.0, ASS and coloured LED for on/off (Green/Red) indication with adjustable thermal magnetic release and (ICS = 25 KA upto 433 V) - 1 Set					
(ii)	MCCB 4 Pole, 40 A, 25 KA with CT operated digital Ammeter (0 - 60 A), with 3 CT's of 60/5 A, 10 VA, accuracy 1.0, ASS and coloured LED for on/off (Green/Red) indication with adjustable thermal magnetic release and (ICS = 25 KA upto 433 V) - 6 Sets					
(iii)	MCB Double Pole, 16 A, 10 KA - 2 Nos.					
i)	Fully Automatic Star Delta Starter suitable for Pressurization Pump (Minimum 12.5 / 15 HP capacity) complete with over load protection, current sensing type single phase preventer complete with all accessories and wiring etc. as required - 1 Set					
j)	Fully Automatic Star Delta Starter suitable for Pressurization Pump (Minimum 7.5 / 10 HP capacity) complete with over load protection, current sensing type single phase preventer complete with all accessories and wiring etc. as required - 6 Set					
k)	Selector switches for Auto / Manual operation, Local / Remote / OFF and ON / OFF / TRIP indications - 2 Sets					
	<b>Operation of Terrace Pump</b>					
l)	Selector switches for Auto / Manual operation, Local / Remote / OFF and ON / OFF / TRIP indications, along with suitable contactors, relays etc. (without cable for terrace pump) - 5 Sets					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Diesel Engine Control</b>					
m)	Auto / Manual selector switch and 3 attempt Starting device, Electronic timer, Relays, Auxiliary switches, Rotary switches, Tripping relays, Contactors, Push button for manual Start / Stop etc. to make the equipment automatic as per functional requirement.					
n)	Battery charging unit suitable for 24 V DC with boost and trickle charger, selector switch, with suitable rating transformer, rectifier, RC filter network, fuses on AC and DC protection, 0 - 30 V DC Digital Volt meter, 0 - 20 A DC Digital Ammeter, the charger should be cut off when the engine is started and the batteries shall be charged from battery charging alternator provided in the engine.					
o)	Suitable rating & type standard relays, contactors and other accessories for automatic operation of diesel engine					
p)	Indication LED's for high / low lub, oil pressure, water temperature, engine on indicator, with suitable alarms, acknowledgement button etc.					
	<b>System Controller</b>					
q)	Designing, Supply, Installation, Testing and Commissioning of system controller to control operation of Main Electric Fire Pump, Diesel Engine Pump, Main sprinkler fire pump, Pressurization Pumps, Terrace Pumps in sequence as per specification consisting of relays, timers, sensors, annunciation window for fault indication, complete as per specification. The System controller should be compatible with the required BMS.					
r)	Colour coded internal wiring and connections etc. with suitable size Fire Retardant Low Smoke PVC insulated copper cable / solid aluminium strip / bus bar from incoming to bus bar and from bus bar to switch gears / MCCB, starters, meters, selector switches, indicating LED's, interlocking and sequence operation arrangements					
s)	Terminal facility for repeat indicator of various audio and visual indications	jobs	1			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - III - (Hydrants and Sprinklers)</b>					
1	Supplying and fixing 4 way 63 mm instantaneous <b>Fire Brigade Inlet Connection (FBIC)</b> comprising of gunmetal body and gunmetal instantaneous male inlet coupling conforming to IS:904 with plug and cap with chain as required with nuts & bolts and high pressure rubber gasket, suitable for 150 mm dia MS pipe connection etc. complete as required.	Nos.	2			
2	Supply, Installation, Testing and Commissioning of instantaneous two way <b>Suction Collecting Head</b> with suitable foot valve conforming to relevant IS ammended upto date consisting of 63 mm Gun Metal dual plate, female round thread connection inlet coupling with plug and cap, chain bends and other accessories etc. complete for 150 mm dia M.S. pipe as required.	Nos.	1			
3	Supply, Installation, Testing and Commissioning 100% synthetic <b>flax canvas</b> Non-percolating FIRE hose (Type A), I.S.I marked 63mm diax15m long with stainless steel male & female couplings (ISI marked) bound & riveted to hose pipes with copper rivets and copper wire as required.		72			
4	Supplying and Fixing of <b>Weather Proof Hose Cabinet</b> suitable for external yard hydrant / FBIC fabricated out of 2 mm thick M.S. sheet with 6 mm thick glazed glass door in front having locking arrangements, suitable to accommodate external hydrant with butterfly valve, 2 nos 15 Mtr. long hose reels, branch pipe / FBIC with all the necessary pipes, accessories, fittings etc., mounted on wall or raised brick platform and duly painted with PO Red externally and white internally with synthetic enamel paint, sign writing etc. complete in all respects as required at site and having minimum following dimensions.					
4.1	900 mm x 600 mm x 500 mm deep	Each	52			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
5	Providing and fixing Fire hose cabinet with glazed door shutter and frame with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 2100 mm high x 1200 mm wide x 600mm deep with locking arrangement, 4mm thick glass with M.S. flats including all accessories, painting with one coat of steel primer and two coats of postal red enamel paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	Each	36			
6	Providing and fixing <b>single gunmetal suction collecting head</b> as per IS: 904-1983, hose coupling (draw out connection) with female outlet as per 903 complete with 150 mm dia. G.I. Suction pipe (with puddle flange) with a foot valve with strainer complete as per drawings.	Each	1			
<b>SUB TOTAL</b>						

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - IV - (Piping, Valves and Accessories)</b>					
1.	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. (Underground)					
1.1	80 mm dia nominal bore	Meter	190			
2	Supplying and laying S&S centrifugally cast (spun) / Ductile iron pipes conforming to IS: 8329					
2.1	150 mm dia Ductile Iron class K-9	Meter	1980			
2.2	200 mm dia Ductile Iron class K-9	Meter	25			
3	Providing & Laying D.I. Specials of class K-12 suitable for mechanical jointing as per IS:9523					
3.1	Upto 600 mm dia	quintal	106			
4	Providing push-on-joints to centrifugally (Spun) cast iron pipes of ductile iron pipes including testing of joints and including the cost of rubber gasket					
4.1	150 mm dia Ductile Iron class K-9	joints	849			
4.2	200 mm dia Ductile Iron class K-9	joints	11			
5	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener, cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
5.1	250 mm dia (with Flanged joints)		35			
5.2	200 mm dia (with Flanged joints)		25			
5.3	150 mm dia (with Flanged joints)	Meter	25			
5.4	65 mm dia	Meter	4			
5.5	50 mm dia	Meter	6			



Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
6	Providing and fixing C.I. sluice valves (With cap) of approved quality complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) Class II					
6.1	250 mm dia	Each	2			
6.2	200 mm dia	Each	2			
6.3	150 mm dia	Each	6			
6.4	65 mm dia	Each	2			
6.5	50 mm dia	Each	3			
7	Supplying, Installation, Testing and Commissioning of <b>Butterfly valves of PN 1.6</b> rating of following sizes with nitrile Bronze / G.M. seat duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.					
7.1	150 mm dia	Each	7			
7.2	80 mm dia	Each	36			
8	Providing, Installation, Testing and Commissioning of double flanged cast iron <b>Non-Return Valve</b> , PN 1.6 of following sizes confirming to IS : 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.					
8.1	250 mm dia.	Each	1			
8.2	150 mm dia	Each	3			
8.3	50 mm dia	Each	2			
9	Supplying and Fixing <b>Orifice Plate</b> made of 6 mm thick, upto 200 mm outer dia. stainless steel with orifice (internal dia.) of required size in between flange & landing valve of external and internal hydrant to reduce pressure to working pressure of 3.5 Kg / cm <sup>2</sup> complete as per specifications as required.	Each	36			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
10	Supplying, Installation, Testing and Commissioning of <b>Pressure Switches</b> suitable for operating with fire hydrant system for working pressure of 14.0 Kg /cm <sup>2</sup> including electrical control wiring with suitable rating PVC insulated & sheathed armoured copper conductor control cable upto control panel, connections etc. complete as required.	Each	5			
11	Supply, Installation, Testing and Commissioning of 150 mm dia Bourden type, Stainless Steel dial type <b>Pressure Gauge</b> including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm <sup>2</sup> .	Each	7			
12	Supplying, Installation, Testing and Commissioning of CI body flanged (both ends) type serviceable suction / <b>Y strainer</b> with (stainless steel / brass mesh) conforming to relevant IS specifications amended upto date complete including providing and fixing nuts, bolts, washers, gaskets etc. complete as required.					
12.1	150 mm dia		3			
12.2	65 mm dia		2			
	<b>SUB TOTAL</b>					

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
	<b>Sub Head - V - (Cable Tray, Cabling and Earthing)</b>					
1	Fabricating and Installing following size of perforated MS cable tray 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.					
1.1	300 mm width x 50 mm depth x 1.6 mm thickness	Mtr.	100			
1.2	150 mm width x 50 mm depth x 1.6 mm thickness	Mtr.	250			
2	Supply, Laying, Fixing, Testing and Commissioning of following sizes of XLPE insulated PVC sheathed armoured aluminium conductor cable of 1.1 KV grade on existing cable tray / surface as required.					
2.1	3 x 10 Sq.mm.	Mtr.	20			
2.2	3 x 16 Sq.mm.	Mtr.	100			
2.3	3 x 70 Sq.mm.	Mtr.	100			
3	Supply and making end termination with brass compression gland and aluminium lugs for following size of XLPE insulated and PVC sheathed aluminium conductor cable of 1.1 KV grade as required.					
3.1	3 x 10 Sq.mm.	Sets	28			
3.2	3 x 16 Sq.mm.	Sets	8			
3.3	3 x 70 Sq.mm.	Sets	8			
4	Earthing with G.I. 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.	Sets	2			
5	Extra for using charcoal and salt for G.I. or copper plate earth electrode as required.	Sets	2			

Item No	Description Of Item	Unit	Total Qty	Rate in Fig (RS)	Rate in Words	Amount in Fig (Rs)
6	Providing and Fixing 25 mm x 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode as required.	Mtr.	40			
7	Providing and Fixing 25 mm x 5 mm GI strip on surface or in recess for connections etc. as required.	Mtr.	60			
8	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Mtr.	200			
<b>SUB TOTAL</b>						

PROPOSED LADY HRDINAGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT SHAHEED BHAGAT SINGH MARG, NEW DELHI						
BOQ OF INTERNAL ELECTRICAL WORKS HOSPITAL AREA (PACKAGE-1)						
Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
1	<b>METERBOARDS AND DISTRIBUTION BOARDS</b>					
1.01	Supplying, installation, testing and commissioning of M.V. cubical type totally enclosed dust and vermin proof Main Distribution Bords complete with bus bars , MV danger notice plate, Digital type Multifunction meter with Ammeter, Ammeter selector switch , voltmeter with Voltmeter selector switch , indicating lamps, cast resin CT's , Interconnection with suitable capacity aluminium strips / rods, connection of incoming and outgoing cables with thimbles , stove enamelled painted and having following incoming and outgoing switch fuse/ fuse and MCBs MCCBs complete as required.					
	<b>ACADMIC</b>					
	i. <b>LIGHT SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 32A ,415 Volts,Ics=16kA, TP MCCB					
	3 nos. 25A ,415 Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
ii.	<b>POWER SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
iii.	<b>AHU SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 40A ,415 Volts, Ics=16kA, TP MCCB					
	3 nos. 16A ,415 Volts, Ics=16kA, 4P MCB					
	6 nos. 10A ,415 Volts,Ics=16kA, 4P MCB	Set	1			
iv.	<b>UPS SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	4 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	2 nos. 32A, 230 Volts, Ics=10kA, DP MCB					
	4 nos. 20A, 230 Volts, Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
v	<b>SOLAR SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	10 nos. 20A, 230 Volts, Ics=10kA, DP MCB	Set	1			
vi.	<b>LIGHT SUPPLY MDB -2 (1st Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 20A ,230Volts, Ics=10kA, DP MCB	Set	1			
vii	<b>POWER SUPPLY MDB -2 (1st Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
viii	<b>AHU SUPPLY MDB -2 (1st Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 40A, 415 Volts, Ics=16kA, TP MCCB					
	3nos. 16A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			
ix	<b>UPS SUPPLY MDB-2 (1st Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	4 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	2 no. 32A ,230Volts , Ics=10kA, DP MCB					
	4 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			
x	<b>LIGHT SUPPLY MDB -3 (2nd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xi	<b>POWER SUPPLY MDB -3 (2nd Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
xii	<b>AHU SUPPLY MDB -3 (2nd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 no. 40A ,415Volts, Ics=16kA, TP MCCB					
	8 nos. 16A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			
xiii	<b>UPS SUPPLY MDB-3 (2nd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	4 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	1 no. 32A ,230Volts , Ics=10kA, DP MCB					
	5 no. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xiv	<b>LIGHT SUPPLY MDB -4 (3rd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xv	<b>POWER SUPPLY MDB -4 (3rd Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
xvi	<b>AHU SUPPLY MDB-4 (3rd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 no. 40A ,415Volts, Ics=16kA, TP MCCB					
	5 nos. 16A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xvii	<b>UPS SUPPLY MDB-4 (3rd Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	1 nos. 40A ,415 Volts, Ics=10kA, 4P MCB					
	3 nos. 25A ,415 Volts, Ics=10kA, 4P MCB					
	6 nos. 20A ,230 Volts, Ics=10kA, DP MCB	Set	1			
xviii	<b>LIGHT MDB -5(4th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 20A ,230 Volts, Ics=10kA, DP MCB	Set	1			
xix	<b>POWER SUPPLY MDB -5 (4th Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xx	<b>AHU MDB -5 (4th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 16A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			
xxi	<b>UPS MDB-5 (4th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	3 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			
xxii	<b>LIGHT MDB -6 (5th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxiii	<b>POWER SUPPLY MDB -6 (5th Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
xxiv	<b>AHU MDB -6 (5th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 16A ,415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			
xxv	<b>UPS SUPPLY MDB-6 (5th Floor)</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	3 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	3 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			
xxvi	<b>LIGHT MDB -7 (6th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxvii	<b>POWER SUPPLY MDB -7 (6th Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
xxviii	<b>AHU MDB -7 (6th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 16A ,415 Volts, Ics=10kA, 4P MCB					
	6 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			
xxix	<b>UPS SUPPLY MDB-7 (6th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	3 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	6 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxx	<b>LIGHT MDB -8 (7th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 no. 25A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			
xxxii	<b>POWER SUPPLY MDB -8 (7th Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415 Volts, Ics=16kA, TP MCCB					
	6 nos. 40A ,415 Volts, Ics=16kA,TP MCCB	Set	1			
xxxiii	<b>AHU MDB -8 (7th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 16A, 415 Volts, Ics=10kA, 4P MCB					
	7 nos. 10A, 415 Volts, Ics=10kA, 4P MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxiii	<b>UPS SUPPLY MDB-8 (7th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Cu. alloy					
	<b>OUT GOING:</b>					
	3 nos. 25A, 415 Volts, Ics=10kA, 4P MCB					
	7 nos. 20A ,230Volts , Ics=10kA, DP MCB	Set	1			
xxxiv	<b>LIFT SUPPLY MDB-16 (Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no 200A, 415Volts, Ics=35kA, 4P MCCB with electrical and mechanical interlocking.					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 100A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 32A ,230Volts , Ics=10kA, DP MCB	Set	1			
xxxv	<b>LIFT SUPPLY MDB-17 (Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no 200A, 415Volts, Ics=35kA, 4P MCCB with electrical and mechanical interlocking.					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 100A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 32A ,230Volts , Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxvi	<b>MDB-10 (Terrace Floor)</b>					
	<b>INCOMER :</b>					
	1 nos.125A, 415Volts, Ics=25kA, 4P MCCB .					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 25A, 415 Volts, Ics=15kA, TP MCCB					
	2 nos. 32A, 415 Volts, Ics=15kA, TP MCCB					
	1 nos. 63A, 415 Volts, Ics=15kA, TP MCCB	Set	1			
1.02	<b>ONCLOGY</b>					
i.	<b>LIGHT &amp; POWER NORMAL SUPPLY MDB -1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	3 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
ii.	<b>MDB -2 AHU PANEL (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	9 nos. 10/16A ,415Volts, Ics=10kA, 4P MCB					
	2 nos. 25A ,415Volts, Ics=10kA, 4P MCB					
	3 nos. 40A ,415Volts, Ics=10kA, 4P MCB	Set	1			
iii.	<b>MDB -1 (EQUIPMENT) (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 630A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	800A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	3 nos. 16A ,415Volts, Ics=15kA, TP MCCB					
	1 nos. 40A ,415Volts, Ics=15kA, TP MCCB					
	1 nos. 63A ,415Volts, Ics=15kA, TP MCCB					
	4 nos. 250A ,415Volts, Ics=15kA, TP MCCB	Set	1			
iv.	<b>MDB -2 (L+P) (1st. Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	300A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 20/25A ,415Volts, Ics=10kA, DP MCB					
	1 nos. 25A ,415Volts, Ics=15kA, TP MCCB					
	4 nos. 40A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 63A ,415Volts, Ics=15kA, TP MCCB	Set	1			
v.	<b>MDB -5 (AHU ) (1st. Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	14 nos. 10/16A ,415Volts, Ics=10kA, 4P MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
vi.	<b>MDB -3 (L+P) (2nd. Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	1 nos. 20A ,415Volts, Ics=10kA, DP MCB					
	2 nos. 25A ,415Volts, Ics=15kA, TP MCCB					
	1 nos. 32A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 40A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 63A ,415Volts, Ics=15kA, TP MCCB					
	1 nos. 100A ,415Volts, Ics=15kA, TP MCCB	Set	1			
vii.	<b>MDB -7 (AHU) (2nd. Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	20 nos. 10/16A ,415Volts, Ics=10kA, 4P MCB	Set	1			
viii.	<b>MDB -3 (EQUIPMENT) (2nd. Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	11 nos. 63A ,220Volts, Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
ix.	<b>MDB -4 (L+P) (3rd. Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 20/25A ,220Volts, Ics=15kA, DP MCB					
	1 nos. 25A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 32/40A ,415Volts, Ics=15kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=15kA, TP MCCB	Set	1			
x.	<b>MDB -10 (AHU) (3rd. Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	17 nos. 10/16/25A ,415Volts, Ics=10kA, 4P MCB	Set	1			
xi.	<b>MDB - 5 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	6 nos. 63A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xii.	<b>MDB -1 (SOLAR)</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 100A TPN bus bars of aluminium alloy. <b>OUT GOING:</b> 6 nos. 20A ,415Volts, Ics=10kA, DP MCB	Set	1			
xiii.	<b>EMERGENCY MDB - 1 (Ground Floor)</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 100A TPN bus bars of Copper alloy. <b>OUT GOING:</b> 3 nos. 20A ,240Volts, Ics=10kA, DP MCB 2 nos. 32A ,240Volts,, Ics=10kA, DP MCB	Set	1			
xiv	<b>EMERGENCY MDB - 2 (1st. Floor)</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 100A TPN bus bars of Copper alloy. <b>OUT GOING:</b> 8 nos. 20A ,240Volts,, Ics=10kA, DP MCB	Set	1			
xv.	<b>EMERGENCY MDB - 3 (2nd. Floor)</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 100A TPN bus bars of Copper alloy. <b>OUT GOING:</b> 6 nos. 20A ,240Volts,, Ics=10kA, DP MCB	Set	1			
xvi.	<b>EMERGENCY MDB - 4 (3rd. Floor)</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 100A TPN bus bars of Copper alloy. <b>OUT GOING:</b> 4 nos. 20A ,240Volts,, Ics=10kA, DP MCB 2 nos. 25A ,240Volts,, Ics=15kA, TP MCCB	Set	1			
1.03	<b>OPD</b>					
i.	<b>MDB-1 (LIGHT) Lower Basement Floor</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 150A TPN bus bars of aluminium alloy.					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>OUT GOING:</b>					
	6 nos. 25A ,415 Volts, Ics=16kA, TP MCCB	Set	1			
ii	<b>MDB-2 (LIGHT) Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415 Volts, Ics=16kA, TP MCCB					
	4 nos. 25A ,415 Volts, Ics=16kA, TP MCCB	Set	1			
iii	<b>MDB-3 (LIGHT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 16A, 415Volts 10kA, 4P MCB	Set	1			
iv	<b>MDB-4 (LIGHT) Ground Floor, Common Area</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts,Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	9 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 32A 240Volts 10kA, DP MCB					
	9 nos. 20A 240Volts 10kA, DP MCB	Set	1			
v	<b>MDB-5 (LIGHT) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	5 nos. 10,16A, 415Volts 10kA, 4P MCB	Set	1			
vi.	<b>MDB-6 (LIGHT) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	8 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
vii.	<b>MDB-7 Third Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Sets	1			
viii.	<b>MDB-8 (LIGHT) 4th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 25, 32A ,415Volts, Ics=16kA, TP MCCB	Sets	1			
ix.	<b>MDB-9 (LIGHT) 5th Floor</b>					
	<b>INCOMER :</b>					
	1 no. 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
x.	<b>MDB-10 (LIGHT) 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	11 nos. 10,16A, 415Volts 10kA, 4P MCB					
	5 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xi.	<b>MDB-11 (LIGHT) 7th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 16A, 415Volts 10kA, 4P MCB					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xii	<b>MDB-12 (LIGHT) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	16 nos. 10,16A, 415Volts 10kA, 4P MCB					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	1 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xiii	<b>MDB - 13 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	10 nos. 40, 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xiv	<b>MDB-VENTILATION TERRACE Floor</b>					
	<b>INCOMER :</b>					
	1 no 250A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 10,16A, 415Volts 10kA, 4P MCB					
	6 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	12 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xv	<b>MDB-14 (LIGHT) Ground Floor, Common Area</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts,Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	11 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xvi	<b>MDB-15 (LIGHT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 16A, 415Volts 10kA, 4P MCB	Set	1			
xvii	<b>SOLAR MDB (COMMON AREA)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy.					
	<b>OUT GOING:</b>					
	12 nos. 10A ,240 Volts, Ics=10kA, DP MCB	Set	2			
xviii	<b>MDB-16 (LIGHT) First Floor</b>					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	8 nos. 10,16A, 415Volts 10kA, 4P MCB					
	4 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xix	<b>MDB-17 (LIGHT) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 10,16A, 415Volts 10kA, 4P MCB					
	4 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xx	<b>MDB-18 (LIGHT) Third Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxi	<b>MDB-19 (LIGHT) Fourth Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxii	<b>MDB-20 (LIGHT) Fifth Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxiii	<b>MDB-21 (LIGHT) sixth Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxiv	<b>MDB-22 (LIGHT) seventh Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 10,16A, 415Volts 10kA, 4P MCB					
	4 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxv	<b>MDB-23 (LIGHT) Eighth Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 10,16A, 415Volts 10kA, 4P MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxvi	<b>MDB - 24 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	10 nos. 40, 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxvii	<b>MDB-VENTILATION Lower Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no 630A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	800A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	12 nos. 32, 100A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 125A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxviii	<b>MDB-VENTILATION Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no 400A, 415Volts, Ics=35kA, 4P MCCB					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	600A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 100A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 125A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxix	<b>MDB-1 &amp; 2 (POWER) Lower &amp; Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 32A ,415Volts., Ics=16kA, TP MCCB	Set	2			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxx	<b>MDB-3 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 25, 63A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxix	<b>MDB-4 (POWER) Common Area Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	19 nos.32, 40A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxix	<b>MDB-5 (POWER) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxix	<b>MDB-6 (POWER) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxix	<b>MDB-7 (POWER) 3rd Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxv	<b>MDB-4 (POWER) 4th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxvi	<b>MDB-9 (POWER) 5th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxvii	<b>MDB-10 (POWER) 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 32, 40A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxviii	<b>MDB-11 (POWER) 7th Floor</b>					
i	<b>INCOMER :</b>					
	1 no.125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 63A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxix	<b>MDB-12 (POWER) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxx	<b>MDB-13 (POWER) Common Area Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	13 nos. 40A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxxi	<b>MDB-14 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxxii	<b>MDB-15 (POWER) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxxiii	<b>MDB-16,17,18,19,20 (POWER) 2nd,3rd,4th,5th,6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	5			
xxxiv	<b>MDB-21 (POWER) 7th Floor</b>					
	<b>INCOMER :</b>					
	1 no.125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxxv	<b>MDB-22 (Equipment) 7th Floor</b>					
	<b>INCOMER :</b>					
	1 no.400A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	600A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	5 nos. 160A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxxv i	<b>MDB-23 (POWER) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxxxv ii	<b>UPS MDB-1, 2 Lower &amp; Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy.					
	<b>OUT GOING:</b>					
	2 nos. 20A ,240 Volts, Ics=10kA, DP MCB					
	2 nos. 32A ,240 Volts, Ics=10kA, DP MCB	Set	2			
xxxxv iii	<b>MDB -4 (UPS) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	10 nos. 20A ,240 Volts, Ics=10kA, DP MCB	Set	1			
xxxxi x.	<b>MDB -3 (UPS) Ground to 8th Floor, Common Area</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	21 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx	<b>MDB -5 (UPS) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx i	<b>MDB -6 (UPS) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	7 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx ii	<b>MDB -7 (UPS) 3rd Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx iii	<b>MDB -8 (UPS) 4th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	4 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx iv	<b>MDB -9 (UPS) 5th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	200A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 40A, 415Volts, Ics=10kA, 4P MCB					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx v	<b>MDB -10 (UPS) 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	3 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	7 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxxxx vi	<b>MDB -11 (UPS) 7th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A, 415Volts, Ics=10kA, 4P MCB					
	6 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxxxx vii	<b>MDB -12 (UPS) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	200A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 40A, 415Volts, Ics=10kA, 4P MCB					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	1			
1.04	<b>A &amp; E</b>					
i.	<b>MDB-1 (LIGHT) Lower Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	6nos. 25A,415Volts, Ics=15 kA, TP MCCB	Set	1			
ii	<b>MDB-2 (LIGHT) Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	5nos. 25A, 32A 415Volts, Ics=15 kA, TP MCCB	Set	1			
iii	<b>MDB-3 (LIGHT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos.10A, 20A 240 Volts, Ics=10 kA, DP MCB					
	3nos. 32A,415Volts, Ics=15 kA,TP MCCB	Set	1			
iv	<b>MDB-4 (LIGHT) Ground Floor, Common Area</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts,Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	20 nos.32A, 240 Volts, Ics=10 kA, DP MCB					
	5nos. 25A, 40A 415 Volts, Ics=15 kA,TP MCCB	Set	2			
v	<b>MDB-5 (LIGHT) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos25A, 32A,415 Volts, Ics=15 kA,TP MCCB					
	2nos.40A ,415 Volts, Ics=15 kA,TP MCCB	Set	1			
vi	<b>MDB-7, 8, 9,10,11,12 (LIGHT) 2nd to 7th Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 32A,415 Volts,Ics=15 kA,TP MCCB	Set	6			
vii	<b>MDB-13 (LIGHT) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 10A, 240Volts, Ics=10 kA, DP MCB					
	4 nos. 40A 415Volts, Ics=15 kA,TP MCCB	Set	1			
viii	<b>MDB - 16 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2no.200A,415Volts, Ics=25 kA,4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	2nos. 32A ,415Volts, Ics=15 kA,TP MCCB					
	7nos. 100A ,415Volts, Ics=15 kA,TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
ix	<b>MDB-1 (POWER) Lower Basement Floor</b>					
	<b>INCOMER :</b>					
	1no.125A,415Volts,Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos.32A,415Volts, Ics=15 kA,TP MCCB	Set	1			
x	<b>MDB-1 (POWER) Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1no.125A,415Volts,Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos.40, 63A 415Volts, Ics=15 kA,TP MCCB					
	5 nos.63A,415Volts, Ics=15 kA,TP MCCB	Set	1			
xi	<b>MDB-3,6,8 (POWER) Ground, First, Second Floor</b>					
	<b>INCOMER :</b>					
	1no.125A,415Volts,Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 40A ,415 Volts, Ics=15 kA, TP MCCB					
	4 nos. 63A ,415 Volts, Ics=15 kA, TP MCCB	Set	3			
xii	<b>MDB-4 (POWER) Ground Floor, Common Area</b>					
	<b>INCOMER :</b>					
	1 no 160A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	17 nos. 32A ,415 Volts, Ics=15 kA, TP MCCB					
	1 nos. 63A ,415 Volts, Ics=15 kA, TP MCCB	Set	1			
xiii	<b>MDB-10, 12, 14, &amp; 16 (POWER) 3rd to 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no 160A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 63A ,415 Volts, Ics=15 kA, TP MCCB	Set	4			
xiv	<b>MDB- 18 (POWER) 7th Floor</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>INCOMER :</b>					
	1 no 125A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 40A ,415 Volts, Ics=15 kA, TP MCCB					
	3 nos. 63A ,415 Volts, Ics=15 kA, TP MCCB	Set	1			
xv	<b>MDB-19 (POWER) 8th Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 63A 415Volts, Ics=15 kA,TP MCCB	Set	1			
xvi	<b>MDB-20 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no 200A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 40A 415Volts, Ics=15 kA,TP MCCB					
	2 nos. 63A 415Volts, Ics=15 kA,TP MCCB					
	1 nos.160A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xvii	<b>MDB-21 (POWER) Ground Floor COMMON AREA</b>					
	<b>INCOMER :</b>					
	1 no 160A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 32A 415Volts, Ics=15 kA,TP MCCB					
	1 nos.63A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xviii.	<b>MDB-22 (POWER) First Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos.63A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xix	<b>MDB-23,25,29,31 (POWER) 2nd,3rd,4th,5th,6th Floor</b>					
	<b>INCOMER :</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 no 125A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos.63A,415Volts,Ics=15 kA,TP MCCB	Set	5			
xx	<b>MDB-33 (POWER) Seventh Floor</b>					
	<b>INCOMER :</b>					
	1 no 125A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos.40,63A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xxi	<b>MDB-34 (POWER) Eighth Floor</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA,4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos.32,63,100A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xxii	<b>AHU Panel-1 Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 10, 16A,415 Volts, Ics=10 kA,4P MCB					
	2 nos. 25A,415 Volts, Ics=10kA,4P MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxiii	<b>AHU Panel-2 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	10 nos. 10A, 415Volts, Ics=10 kA,4P MCB					
	2 nos. 16, 25A, 415 Volts, Ics=10 kA,4P MCB					
	3 nos.40A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xxiv	<b>AHU Panel-3 (First Floor)</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 10A, 415 Volts, Ics=10 kA,4P MCB					
	10 nos. 16A, 415 Volts, Ics=10 kA,4P MCB					
	4 nos. 25A, 415 Volts, Ics=10 kA,4P MCB					
	2 nos.40A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xxv	<b>AHU Panel-4 (Second Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 16A,415Volts,Ics=10kA, 4PMCB	Set	1			
xxvi	<b>AHU Panel-5 (Seventh Floor)</b>					
	<b>INCOMER :</b>					
	1 no 100A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 25A,415 Volts,Ics=10 kA,4P MCB	Set	1			
xxvii	<b>AHU Panel-6 (Eieigth Floor)</b>					
	<b>INCOMER :</b>					
	1 no 125A,415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	10 nos. 10A, 415Volts, Ics=10 kA, 4P MCB					
	14 nos. 16A, 415Volts, Ics=10 kA, 4P MCB					
	5 nos. 25A, 415Volts, Ics=10 kA, 4P MCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xxviii	<b>MDB-5 (Equipment) Ground Floor</b> <b>INCOMER :</b> 1 no 100A,415Volts, Ics=25 kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 300A TPN bus bars of aluminium alloy <b>OUT GOING:</b> 7nos. 63A, 240Volts, Ics=10 kA, DP MCB	Set	1			
xxix	<b>MDB-6 (Equipment) First Floor</b> <b>INCOMER :</b> 1 no 250A,415Volts, Ics=25 kA, 4P C/O switch 1 no 250A,415Volts, Ics=25 kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 400A TPN bus bars of aluminium alloy <b>OUT GOING:</b> 12 nos.40,63A,415Volts,Ics=15 kA,TP MCCB	Set	1			
xxx	<b>MDB-7 (Equipment) First Floor</b> <b>INCOMER :</b> 1 no 100A,415Volts, Ics=25 kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 300A TPN bus bars of aluminium alloy <b>OUT GOING:</b> 7nos. 63A, 240Volts, Ics=10 kA, DP MCB	Set	1			
xxxi	<b>MDB-9,11,13,15,17,24,26,28,30,32 (Equipment) 2nd,3rd,4th,5th,6th Floor</b> <b>INCOMER :</b> 1 no 125A,415Volts, Ics=25 kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 300A TPN bus bars of aluminium alloy <b>OUT GOING:</b> 12 nos. 63A, 240Volts, Ics=10 kA, DP MCB	Set	10			
xxxii	<b>MDB-14,15 (Equipment) Eighth Floor</b> <b>INCOMER :</b> 1 no 250A,415Volts, Ics=25 kA, 4P C/O switch 1 no 250A,415Volts, Ics=25 kA, 4P MCCB 1 set of Phase indicating lamp with MCB <b>BUS BARS:</b> 400A TPN bus bars of aluminium alloy <b>OUT GOING:</b> 12 nos.40,63A,415Volts,Ics=15 kA,TP MCCB	Set	2			
xxxiii	<b>SOLAR MDB (Common Area) Lower Basement to Eighth Floor</b> <b>INCOMER :</b> 1 no.100A, 415Volts, Ics=25kA, 4P MCCB					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of copper alloy.					
	<b>OUT GOING:</b>					
	13 nos. 10A ,240 Volts, Ics=10kA, DP MCB	Set	1			
xxxiv	<b>MDB-Lower Basement ( ventilation)</b>					
	<b>INCOMER :</b>					
	1 no.400A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	600A TPN bus bars of Aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 32A ,415Volts, Ics=15kA, TP MCCB					
	7 nos. 100A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 125A ,415Volts, Ics=15kA, TP MCCB	Set	1			
xxxv	<b>MDB-Upper Basement ( ventilation)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of Aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=15kA, TP MCCB					
	2 nos. 40A ,415Volts, Ics=15kA, TP MCCB	Set	1			
xxxvi	<b>MDB-17 Terrace ( ventilation)</b>					
	<b>INCOMER :</b>					
	1 no.200A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of Aluminium alloy					
	<b>OUT GOING:</b>					
	7 nos. 10, 16A, 415Volts, Ics=10 kA,4P MCB					
	10 nos. 25A ,415Volts, Ics=15kA, TP MCCB					
	5 nos. 40A ,415Volts, Ics=15kA, TP MCCB	Set	1			
xxxvii	<b>UPS MDB -1 Lower Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	4 nos. 10A ,240Volts, Ics=10 kA, DP MCB	Set	1			
xxxvii i	<b>UPS MDB -1 Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	7 nos. 10A ,240Volts, Ics=10 kA, DP MCB	Set	1			
xxxix	<b>UPS SUPPLY MDB -3 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	2 nos. 10A ,240Volts, Ics=10 kA, DP MCB					
	7 nos. 20A ,240Volts, Ics=10 kA, DP MCB					
	2 nos. 25A ,415Volts, Ics=10 kA, 4P MCB	Set	1			
xxxx	<b>UPS SUPPLY MDB -4 (Common Area)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	17 nos. 10A ,240Volts, Ics=10 kA, DP MCB	Set	1			
xxxxi	<b>UPS SUPPLY MDB -5 (First Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	8 nos. 10A ,240Volts, Ics=10 kA, DP MCB					
	2 nos. 40A, 415Volts, Ics=10 kA, 4P MCB	Set	1			
xxxii	<b>UPS SUPPLY MDB -6, 7, 8, 9, 10 (2nd to 6th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	12 nos. 10A ,240 Volts, Ics=10 kA, DP MCB	Set	5			
xxxiii	<b>UPS SUPPLY MDB -11 (7th Floor)</b>					
i	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25 kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	6 nos. 10A, 240 Volts,Ics=10 kA, DP MCB					
	6 nos. 40A, 415Volts,Ics=10 kA,4P MCB	Set	1			
xxxxi v	<b>UPS SUPPLY MDB -12 (8th Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	3 nos. 10A, 240 Volts,Ics=10 kA,DP MCB					
	4 nos. 40A,415Volts, Ics=10 kA,4PMCB	Set	1			
1.05	<b>IPD</b>					
i.	<b>MDB-1 (LIGHT) Lower Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 25A ,415 Volts, Ics=16kA, TP MCCB	Set	1			
ii	<b>MDB-1 (LIGHT) Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	2 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 25A ,415 Volts, Ics=16kA, TP MCCB	Set	1			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
iii	<b>MDB-3 (LIGHT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no. 100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 20A, 415Volts 10kA, 4P MCB					
	3 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
iv	<b>MDB-13 (LIGHT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	3 nos. 20A, 415Volts 10kA, 4P MCB					
	1 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
v	<b>MDB-4 (LIGHT) Common Area Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	29 nos. 20A, 230Volts 10kA, DP MCB					
	2 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
vi	<b>MDB-5 (LIGHT) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 20A ,415Volts, Ics=10kA, FP MCB					
	3 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
vii	<b>MDB-14 (LIGHT) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 20A ,415Volts, Ics=10kA, FP MCB					
	3 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
viii	<b>MDB-6 (LIGHT) Second Floor</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	15 nos. 10.16A ,415Volts, Ics=10kA, FP MCB					
	3 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
ix	<b>MDB-15 (LIGHT) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	11 nos. 10.A ,415Volts, Ics=10kA, FP MCB					
	4 nos. 25A ,415Volts, Ics=16kA, TP MCCB	Set	1			
x	<b>MDB-7,8,9,16,17,18 (LIGHT) 3rd</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	4			
xi	<b>MDB-11 (VENTILATION) Terrace Floor</b>					
	<b>INCOMER :</b>					
	1 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 10,16.A 415Volts, Ics=10kA, FP MCB					
	16 nos. 25,40A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xii	<b>MDB - 12, 20 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	400A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	3 nos. 40A ,415Volts, Ics=16kA, TP MCCB					
	7 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	2			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xiii	<b>MDB-1 &amp; 2 (POWER) Lower and Upper Basement Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	2 nos. 40A, 240Volts 10kA, DP MCB					
	4 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	2			
xiv	<b>MDB-3 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	14 nos. 32,40A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 63A ,415Volts, Ics=16kA, TP MCCB					
	2 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xv	<b>MDB-16 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	8 nos. 40A, 240Volts 10kA, DP MCB					
	10 nos. 32A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xvi	<b>MDB-17 (POWER) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 32,63A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xvii	<b>MDB-4,18 (EQUIPMENT) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.200A, 415Volts,, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	4 nos. 125A ,415Volts, Ics=16kA, TP MCCB	Set	2			
xviii	<b>MDB-5,19 (POWER) First Floor</b>					
	<b>INCOMER :</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 no.125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	3 nos. 63A ,415Volts, Ics=16kA, TP MCCB	Set	2			
xix	<b>MDB-6 &amp; 20 (EQUIPMENT) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.630A, 415Volts., Ics=36kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	800A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 160A ,415Volts, Ics=18kA, TP MCCB	Set	2			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
xx	<b>MDB-7 (POWER) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	5 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxi	<b>MDB-21 (POWER) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	1 nos. 32A ,415Volts, Ics=16kA, TP MCCB					
	4 nos. 63,100A ,415Volts, Ics=16kA, TP MCCB	Set	1			
xxii	<b>MDB-8,10,22,24 (POWER) 3rd to 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	6 nos. 63A ,415Volts, Ics=16kA, TP MCCB	Set	4			
xxiii	<b>MDB - 9,11,26,25 (EQUIPMENT) 3rd to 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy					
	<b>OUT GOING:</b>					
	12 nos. 63A, 240Volts 10kA, DP MCB	Set	4			
xxiv	<b>SOLAR MDB</b>					
	<b>INCOMER :</b>					
	1 no. 40A, 415Volts, Ics=25kA,4P C/O Switch					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of copper alloy.					
	<b>OUT GOING:</b>					
	12 nos. 10A ,240 Volts, Ics=10kA, DP MCB	Set	1			
xxv	<b>MDB -1,2 (UPS) Lower &amp; Upper Basement Floor</b>					
	<b>INCOMER :</b>					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	4 nos. 20A ,240Volts, Ics=10kA, DP MCB	Set	2			
xxvi	<b>MDB -3 (UPS) Ground Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	5 nos. 20A, 240Volts, Ics=10kA, DP MCB					
	5 nos. 25A, 415Volts, Ics=10kA, 4P MCB	Set	1			
xxvii	<b>MDB -4 (UPS) Ground to 6th Floor, Common Area</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	23 nos. 10A, 240Volts, Ics=10kA, DP MCB	Set	1			
xxviii	<b>MDB -5 (UPS) First Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	8 nos. 20A, 240Volts, Ics=10kA, DP MCB					
	2 nos. 25A, 415Volts, Ics=10kA, 4P MCB	Set	1			
xxix	<b>MDB -6 (UPS) Second Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	9 nos. 20A, 240Volts, Ics=10kA, DP MCB					
	3 nos. 25A, 415Volts, Ics=10kA, 4P MCB	Set	1			
xxx	<b>MDB - 7, 8,(UPS) 3rd to 6th Floor</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	100A TPN bus bars of Copper alloy					
	<b>OUT GOING:</b>					
	11 nos. 20A, 240Volts, Ics=10kA, DP MCB	Set	2			
xxxii	<b>MDB-Lower Basement ( ventilation)</b>					
	<b>INCOMER :</b>					
	1 no.630A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	800A TPN bus bars of Aluminium alloy					
	<b>OUT GOING:</b>					
	8 nos. 100A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 125A ,415Volts, Ics=15kA, TP MCCB	Set	1			
xxxii	<b>MDB-Upper Basement ( ventilation)</b>					
	<b>INCOMER :</b>					
	1 no.630A, 415Volts, Ics=35kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	800A TPN bus bars of Aluminium alloy					
	<b>OUT GOING:</b>					
	5 nos. 32A ,415Volts, Ics=15kA, TP MCCB					
	8 nos. 100A ,415Volts, Ics=15kA, TP MCCB					
	3 nos. 125A ,415Volts, Ics=15kA, TP MCCB	Set	1			
1.06	<b>Hostel-1 &amp; 2</b>					
i.	<b>LIGHT &amp; POWER NORMAL SUPPLY MDB -1 (Hostal Block Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no. 160A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 25A ,415 Volts, Ics=16kA, TP MCCB					
	4 nos. 100A ,415 Volts, Ics=16kA, TP MCCB	Set	10			
ii	<b>MDB - 7 (Lift Machine room at Terrace Floor)</b>					
	<b>INCOMER :</b>					
	2 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	2 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300A TPN bus bars of aluminium alloy.					
	<b>INTERLOCKING:</b>					
	Electrical / Mechanical Interlocking between two incomers.					
	<b>OUT GOING:</b>					
	3. nos. 25A ,230 Volts, Ics=10kA, DP MCB					
	5 nos. 100A ,415Volts, Ics=16kA, TP MCCB	Set	2			
iii	<b>Emergency MDB - 1 (Ground Floor)</b>					
	<b>INCOMER :</b>					
	1 no.100A, 415Volts, Ics=25kA, 4P MCCB					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	1 set of Phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	150A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	11 nos. 10A ,230 Volts, Ics=10kA, DP MCB					
	4. nos. 16A ,230 Volts, Ics=10kA, DP MCB	Set	2			
	<b>TOTAL OF SUBHEAD-I</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
2.00	<b>RISING MAINS AND OTHERS</b>					
2.01	Supply, delivery, erection testing and commissioning of indoor type sandwich 415 V, 3 Phase, 4 wire, vertical Aluminium Rising Main in following sizes including bends,including flexible, Provision of the tap offs as per the drawing on each floor ,2 Nos. of Aluminium earthing strips 50 x 6 mm through out the length of the rising mains, etc. complete as per specifications and requirement including all types of support and necessary hardware for installation of the rising main. (Exact lengths to be measured at site)					
	i	1600 Amp. 415 Volts.	Metre	10		
	ii	1250 Amp. 415 Volts.	Metre	33		
	iii.	1000 Amp. 415 Volts.	Metre	36		
	iv.	800 Amp. 415 Volts.	Metre	66		
	v	630 Amp. 415 Volts.	Metre	192		
	vi	500 Amp. 415 Volts.	Metre	36		
	vii	400 Amp. 415 Volts.	Metre	100		
	viii	250 Amp. 415 Volts.	Metre	132		
	ix	125 Amp. 415 Volts.	Metre	40		
2.02	Supplying fixing Testing and commissioning of reducers for connecting the above higher rating bus trunking to lower rating bus trunking as required with the MCCB of follwing rating.					
	i	1600Amps. - 800Amps.	Nos	1		
	ii	1250Amps. - 630 Amps.	Nos	1		
	iii	1250Amps. - 400 Amps.	Nos	2		
	iv	1000Amps. - 500 Amps.	Nos	2		
	v	800Amps. - 630 Amps.	Nos	3		
	vi	800Amps. - 400 Amps.	Nos	1		
	vii	630Amps. - 250 Amps.	Nos	4		
	viii	630Amps. - 400 Amps.	Nos	3		
	ix	500Amps. - 250 Amps.	Nos	1		
	x	400Amps. - 250 Amps.	Nos	2		
	xi	250Amps. - 125 Amps.	Nos	3		
2.03	Supplying fixing Testing and commissioning of Feed units / intermediate unit in following ratings for above Bus bar Trunking.					
	i	1600 Amp with 4 pole ACB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	1		

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
ii	1250 Amp with 4 pole ACB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	3			
iii	1000 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	2			
iv	800 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	5			
v	630 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	4			
vi	500 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	1			
vii	400 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	2			
viii	250 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	2			

Sl.no.		Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	ix	200 Amp with 4 pole MCCB of 35 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	4			
	x	160 Amp with 4 pole MCCB of 35 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	1			
	xi	125 Amp with 4 pole MCCB of 50 KA with Thermal magnetic trip unit and ON OFF TRIP indication, overload , short circuit and Earth Fault Protection and Digital type Multifunction Meter With voltage, Ampers, KWH and indications lamps with Set of CT's.	Nos	1			
2.04		Supplying fixing Testing and commissioning of Tap off unit with MCCB/ MCB in following raings for above Bus bar Trunking.					
	i.	630 Amp with 4 pole MCCB of 25kA.	Nos	6			
	ii.	400 Amp with 4 pole MCCB of 25kA.	Nos	3			
	iii.	250 Amp with 4 pole MCCB of 25kA.	Nos	4			
	iv.	200 Amp with 4 pole MCCB of 25kA.	Nos	13			
	v	160 Amp with 4 pole MCCB of 25kA.	Nos	54			
	vi	125 Amp with 4 pole MCCB of 25kA.	Nos	42			
	vii	100 Amp with 4 pole MCCB of 25kA.	Nos	52			
	viii	63 Amp with 4 pole MCCB of 25kA.	Nos	60			
	ix	40 Amp with 4 pole MCCB of 25kA.	Nos	12			
	x	25 Amp with 4 pole MCCB of 25kA.	Nos	6			
		<b>TOTAL OF SUBHEAD-II</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
3.00	<b>DISTRIBUTION BOARDS &amp; MCB's</b>					
3.01	Supplying and fixing of following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface / recess, complete with loose wire box, terminal blocks,duly prewired with suitable size of FR PVC insulated copper conductor upto terminal blocks ,tinned copper busbar, neutral link, earth bar,din bar, detachable gland plate, interconnection,phosphatized and powder painted including earthing etc. as required (Butwithout MCB/RCCB/Isolator).					
	i 2+ 4 Way Double door	No.	33			
	ii 2+ 8 Way Double door	No.	340			
	iii 2+ 12 Way Double door	No.	81			
3.02	Supplying and fixing of following way, three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface / recess, complete with loose wire box, terminal blocks,duly prewired with suitable size of FR PVC insulated copper conductor upto terminal blocks ,tinned copper busbar, neutral link, earth bar,din bar, detachable gland plate, interconnection,phosphatized and powder painted including earthing etc. as required (Butwithout MCB/RCCB/Isolator).					
	i 4way (4+12),double door type.	No.	242			
	ii. 6way (4+18),double door type.	No.	182			
	iii. 8way (4+24),double door type.	No.	50			
3.03	Supplying , installation , testing and commissioing of surface/ recessed mounting , vertical type , 415 volts, TPN MCB distribution board of sheet steel , dust protected , duly phosphatized and powder painted , inclusive of 200 amp tinned copper busbar , common neutral link, earth bar,din bar for mounting MCB's , detachable gland/ knock out plate and with 100 amps, 10 KA MCCB as incomer interconnection between incomer MCCB and bus bars of following ways ( but without MCB) as required.					
	i 8 way with 100 amps. MCCB as incomer.	No.	49			
	ii 12 way with 100 amps. MCCB as incomer.	No.	103			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
3.04	Supply and fixing following rating double pole 240 volts, Residual Current Circuit Breaker (RCCB), having a sensitivity current upto 300milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i. 25 Amps	No.	411			
	ii. 40 Amps	No.	48			
3.05	Supply and fixing following rating four pole,(three phase and neutral) 415 volts, Residual Current Circuit Breaker (RCCB), having a sensitivity current upto 300milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i. 25 Amps	No.	147			
	ii. 40 Amps	No.	295			
	iii. 63 Amps	No.	26			
3.06	Supply and fixing 5 Amp to 32 Amp rating 240 volts, 'B' series, miniature circuit breaker suitable of lighting and other load following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i. Single Pole	No.	16470			
3.07	Supply and fixing 20 Amp rating 240 volts, SPN industrial type, socket outlet with 2 pole and earth, metal enclosed plug top along with 20 amp C series SP MCB in steel enclosure, on surface or in recess, with chained metal cover for the shocket outlet and complete with connection testing and commissioning etc. as required.	No	294			
3.08	Supply and fixing 63 Amp rating 240 volts, SPN industrial type, socket outlet with 2 pole and earth, metal enclosed plug top along with 63 amp C series SP MCB in steel enclosure, on surface or in recess, with chained metal cover for the shocket outlet and complete with connection testing and commissioning etc. as required.	No.	140			
3.09	Supplying and fixing 63 Amp double pole 240 volts, MCB in the MCB DB complete with connections, testing and commissioning etc as required.	No.	208			
3.10	Supply and fixing 63 Amp rating 415 volts, TPN industrial type, socket outlet with 4 pole and earth, metal enclosed plug top along with 63 amp C series 4P MCB in steel enclosure, on surface or in recess, with chained metal cover for the shocket outlet and complete with connection testing and commissioning etc. as required.	No.	50			



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>TOTAL OF SUBHEAD-III</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
4.00	<b>POINT WIRING SUBMAIN WIRING</b>					
4.01	Wiring for light point /fan point /exhaust fan point/call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed steel conduit,with modular switch modular plate, suitable GI box and earthing the point with 1.5sq.mm FR PVC insulated copper conductor single core cable etc as required .					
	GROUP-C	Point	20430			
	GROUP-A	Point	1500			
4.02	Wiring for twin control light point with 1.5 sq.mmFR PVC insulated copper conductor single core cable in surface/recessed steel conduit,2 way modular type switch,modular plate, suitable GI box and earthing the point with 1.5sq.mm FR PVC insulated copper conductor single core cable etc as required.	Point	175			
4.03	Wiring for light/power plug with 2x4sq.mm FR PVC insulated copper conductor single core cable in surface/recessed steel conduit along with 1 No 4sq.mm FR PVC insulated copper conductor single cable for loop earthing as required.	Metre	36690			
4.04	Wiring for light/power plug with 4x4sq.mm FR PVC insulated copper conductor single core cable in surface/recessed steel conduit along with 2 No 4sq.mm FR PVC insulated copper conductor single cable for loop earthing as required.	Metre	22120			
4.05	Wiring for circuit/submain wiring alongwith earth wire with the following size of FR PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required					
	i. 2 x 1.5 sq.mm + 1 x 1.5 sq.mm	Metre	37600			
	ii 4 x 1.5 sq.mm + 2 x 1.5 sq.mm	Metre	26000			
	iii 2 x 2.5 sq.mm + 1 x 2.5 sq.mm	Metre	5650			
	iv 2 x 4.0 sq.mm + 1 x 4.0 sq.mm	Metre	1350			
	v 2 x 6.0 sq.mm + 1 x 6.0 sq.mm	Metre	25900			
	vi 2 x 10.0 sq.mm + 1 x 10.0 sq.mm	Metre	10000			
	vii 4 x 2.5 sq.mm + 2 x 2.5 sq.mm	Metre	8500			
	viii 4 x 4.0 sq.mm + 2 x 4.0 sq.mm	Metre	13200			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	ix	4 x 6.0 sq.mm + 2 x 6.0 sq.mm	Metre	14550		
	x	4 x 10.0 sq.mm + 2 x 10.0 sq.mm	Metre	7860		
	xi	4 x 16.0 sq.mm + 2 x 16.0 sq.mm	Metre	6700		
	xii	4 x 25.0 sq.mm + 2 x 25.0 sq.mm	Metre	9400		
4.06	Supply and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amp modular socket outlet and 5/6 amp modular switch, connection, painting etc as required.	each	5222			
4.07	Supply and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 15/16 amp modular socket outlet and 15/16 amp modular switch, connection, painting etc as required.	each	5773			
4.08	Supplying and fixing 3 pin,5 amp.celling rose on the existing junction box/wooden block including connection etc as required	each	2510			
4.09	Supplying and fixing brass batten / angle holder including connection etc as required.	each	60			
4.10	Supply and fixing stepped type electronic fan regulator on the existing modular plat switch box including connection but excluding modular plate etc as required.	each	4023			
4.11	Supplying and fixing call bell / buzzer suitable for D.C / A.C single phase, 230 volts complete as required.	each	1481			
4.12	Deigning fabricatiing, installing and commissioning of floor / ceiling junction boxe fabricating out of 2 mm thick C.R.C.A steel sheet in following sizes with cover plate of 3 mm thickness painted from inside as wel as outside with proper knock outs for conduits.					
	i.	150 mm x 150 mm x 60 mm	Set	225		
	ii.	200 mm x 150 mm x 60 mm	Set	182		
	<b>TOTAL OF SUBHEAD-IV</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
5.00	<b>LOW CURRENT SERVICES</b>					
5.01	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
	i. 20mm	Metre	45800			
	ii. 25mm	Metre	19610			
	iii. 32mm	Metre	8900			
5.02	Supply and fixing following size/modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					
	1 or 2 Module (75mm X 75mm)	each	3483			
5.03	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	Metre	40080			
5.04	Supply and laying of following sizes of 0.61 mm diameter tinned copper conductor (ATC) PVC insulated and PVC sheathed armoured on surface/ cable tray or through existing trench/pipe etc. completed as required.					
	i. 10 Pair	Metre	1850			
	ii. 20 Pair	Metre	4350			
	iii. 50 Pair	Metre	1250			
	iv. 100 Pair	Metre	600			
5.05	Supply and laying of following sizes of CAT - 6 computer data cable tinned copper conductor (AT & T) PVC insulated cable in existing recessed steel conduit completed as required including the termination at both end complete as required.	Metre	82600			
5.06	Supplying and fixing following modular switch /socket on the exiting modular plate & switch box including connection but excluding modular plate etc as required .					
	i. Telephone socket outlet	each	1328			
	ii. Computer data outlet	each	1877			
	iii. TV antenna socket outlet	each	310			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
5.07	Supplying and drawing co-axial Tv cable RG-6 grade,0.7mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with pvc sheath in the existing surface/recessed steel/pvc conduit as required.	Metre	10950			
5.08	Supplying and drawing co-axial Tv cable RG-11 grade,0.7mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with pvc sheath in the existing surface/recessed steel/pvc conduit as required.	Metre	800			
5.09	Supplying , testing and commissioning of following sizes of telephone Krone type distribution Board in P.V.C hinged type box duly painted complete with tag block etc. including termination's of cables etc. as required.					
	i 10 Pair	Set	13			
	ii. 20 Pair	Set	18			
	iii 30 Pair	Set	16			
	iv 40 Pair	Set	22			
	v 50 Pair	Set	15			
	vi 70 Pair	Set	15			
	vii 90 Pair	Set	3			
	viii 100 Pair	Set	3			
	ix 160 Pair	Set	1			
	x 650 Pair	Set	3			
5.10	Supplying and fixing of following type TV Splitter in MS box complete with connection, testing, and commissioning etc as required.					
	i 8 way	Set	12			
	ii 6 way	Set	14			
	iii 4 way	Set	11			
5.11	Supply, fixing, testing and commissioing of Cat6 Patch Cord 2m complete as per specification and requirement.	Each	174			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
5.12	Supply, fixing, testing and commissioning of 24-port 24 10/100/1000T + 4 SFP + IPS Image switch complete as per specification and requirement.	Each	7			
5.13	Supply, fixing, testing and commissioning of 24 10/100 + 2T/SFP LAN Base Image Switch complete as per specification and requirement.	Each	151			
5.14	Supply, fixing, testing and commissioning of SX type GBIC Modules complete as per specification and requirement.	Each	128			
5.15	Supply, fixing, testing and commissioning of LIU Fully Loaded 6 Port complete as per specification and requirement.	Each	56			
5.16	Supply, fixing, testing and commissioning of LIU Fully Loaded 24 Port complete as per specification and requirement.	Each	19			
5.17	Supply, fixing, testing and commissioning of Network Rack 15 U wall mounted rack . Supplied with three cable manager 2 CFM fan , fron locable glass door having IP 20 and IK 08 protection complete as per specification and requirement	Each	2			
5.18	Supply, fixing, testing and commissioning of Network Rack 12 U wall mounted rack . Supplied with two cable manager 2 CFM fan , fron locable glass door having IP 20 and IK 08 protection complete as per specification and requirement	Each	37			
5.19	Supply, fixing, testing and commissioning of Network Rack 9 U wall mounted rack . Supplied with two cable manager 2 CFM fan , fron locable glass door having IP 20 and IK 08 protection complete as per specification and requirement	Each	77			
5.20	Branch Distribution Frame					
	Supply , fixing , tsting and commissioning of Branch Distribution Frame kronr type - 500 pair.	No.	9			
5.21	Supply , fixing , tsting and commissioning of Hook-up wire of cat-3 or equivelent.	Metre	2650			
5.22	Supply , fixing , tsting and commissioning of Digital Phones as per Technical specifications as per specification and requirement. :					
	a. Digital Phone - Elegence IRIS KT 30 as per technical specifications.	Nos.	10			
5.23	Supply , fixing , tsting and commissioning of Analog Phones as per Technical Specifications	Nos.	1438			

Sl.no.		Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
5.24		Deigning fabricatiing, installing and commissioning of floor / ceiling junction boxe fabricating out of 2 mm thick C.R.C.A steel sheet in following sizes with cover plate of 3 mm thickness painted from inside as wel as outside with proper knock outs for c					
	i.	150 mm x 150 mm x 60 mm	Set	162			
	ii.	200 mm x 150 mm x 60 mm	Set	125			
		<b>TOTAL OF SUBHEAD-V</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
6.00	<b>SUPPLYING OF LIGHT FIXTURES &amp; FANS</b>					
6.01	Supply of following light fixture with Electronic ballast, capacitor, lamp, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i. 1 x 28 watt box type surface mounting type fluorescent light fixture complete with all accessories as required (eq to Philips Cat. No. TCH 207 1 X TL5-28W HF)	No.	1090			
	ii. 1 x 36 watt mirror optics surface mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (eq to Philips make Cat no-TCS 605/136HF).	No.	1922			
	iii. 2 x 28 watt mirror optics surface mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (Eq. To Philips cat. no TCS 350/228 C5 HF).	No.	969			
	iv. 1 x 36 watt mirror optics recessed mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (Eq. To Philips cat. no TBS 50/136 HPE).	No.	630			
	v. 2 x 28 watt mirror optics recessed mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (Eq. To Philips cat. no TBS 869/228 D8HF).	No.	300			
	vi. 4 x 14 watt mirror optics recessed mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (Eq. To Philips cat. no TBS 088/414 M2HF-P).	No.	2471			
	vii. 3 x 14 watt mirror optics recessed mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc.complete with all accessories as required (Eq. To Philips cat. no TBS 288-3XTLS-14W HF).	No.	1104			



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
6.02	Supply of following light fixture with Electronic ballast, capacitor, lamp, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i 2 x 11 watt mirror optics surface mounting type CFL fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers complete with control gear and all accessories as required (eq. To Philips cat. no. FCS518/211).	No.	653			
	ii 2 x 11 watt mirror optics recessed mounting type CFL fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers complete with control gear and all accessories as required (eq to Philips cat. no. FBS 518/211,	No.	1035			
	iii 1 x 10 watt recess mounting type CFL fixture in white finish with cover with 1 no 10 watt CFL lamp Philips cat no FBH 120/110-1 X PL-C-10W	No	200			
	iv 1 x 25 watt surface mounting type CFL fixture in white finish with cover and 1 no 25 watt CFL lamp Philips cat no Deco twist lux WWBCS 1902	No	83			
	v 1 x 50 watt recess mounting type CFL fixture with 1 no 12 volt 50 watt halogen lamp Philips cat no DN 652 (white)	No	5			
	vi 1 x 150 watt Metal Halide light with 1 no 150 watt metal halide lamp complete with other accessories etc as required. Philips cat no MVC 502/150	No	56			
	vii 1x 9 watt outdoor bulkhead surface mounting light fixture complete with glass cover, wire guard, gasket, holder, GLS lamp etc. as required ( Eq to Philips cat. No. NXC 101).	No.	354			
	viii 1 x 11 watt surface mounting type CFL fixture in white finish with cover and reflector complete with control gear and all accessories as required (eq. To Philips cat. no. FMS 200 / 111).	No.	411			
	ix 1 x 18 watt mirror optics recessed mounting type CFL fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers complete with control gear and all accessories as required (eq to Philips cat. no. FBH 150 / 118)	No.	207			

Sl.no.		Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	x	2 x 18 watt mirror optics recessed mounting type CFL fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers complete with control gear and all accessories as required (eq to Philips cat. no. FBH 150 / 218)	No.	5118			
	xi	1 x 11 watt wall mounted luminaire for 1 x PL-S 11 W with 1 no 11 Watt CFL lamp Philips make cat no-FMC 170/111	No.	865			
	xii	Supply of Aviation Light Made of Die Cast Aluminium alloy houseing with 5 pallel circuit . Total consumption light shall not be more than 10-12 Watt with all accessories including 40mm dia 1.5 mtr. Long G.I pipe with 300 x 300 x 6mm thick base plate etc as reuquired (eq. to Bajaj cat no. BJAOL ).	No.	5			
6.03		Supply of following sizes of ceiling fan complete with double ball bearing. motor, blades, downrod, canopy, capacitor, regulator etc. suitable for operation on 230 volts 50 Hz A.C. supply complete as required.					
	i.	Size 1200mm.	No.	2429			
	ii	Size 1400mm.	No.	1414			
6.04		Supplying of 600 mm wall bracket fan complete with motor, blades, capacitor, frame, etc suitable for operation on 230 volts, 50 Hz A.C supply complete as required.	No	4			
6.05		Supply of following sizes of heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz AC supply complete with motor, capacitor, louvers / shutters etc. complete as required.					
	i.	230mm dia., 1400 RPM Exhaust fan.	No.	235			
		<b>TOTAL OF SUBHEAD-VI</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
7.00	<b>RECEIVING AND FIXING OF LIGHT FIXTURES &amp; FANS</b>					
7.01	Erection of wall bracket/ceiling fittings of all sizes and shapes containing upto two GLS lamps per fitting complete with all accessories including connection etc as required.	No.	1345			
7.02	Installation, testing and commissioning of prewired fluorescent/compact fluorescent fittings, of all types complete with all accessories and tube etc. directly on ceiling / wall, including connections with 1.5 sq.mm.FR PVC insulated, copper conductor, single core cable etc. as required.	No.	17670			
7.03	Installation, testing and commissioning of ceiling fan and regulator including wiring the down rod of standard length (Up to 30 cm. ) with 1.5 sq.mm. PVC insulated copper conductor single core cable etc. as required.	No.	4357			
7.04	Supplying and fixing extra down rod of 10 centimetre length GI pipe , 15 mm Dia, heavy duty gauge including painting etc, as required.	Each	400			
7.05	Installation of exhaust fan upto 230mm sweep in the existing opening including making the hole to suit the size of the above fan, making good the damage, connections, testing, commissioning etc. as required.	No.	319			
7.06	Extra for fixing the louvers / shutters complete with frame for exhaust fan of all sizes.	No.	279			
7.07	Installation of of Aviation Light Made of Die Cast Aluminium alloy houseing with 5 pallelle circuit . Total consumption light shall not be more than 10-12 Watt with all accessories including 40mm dia 1.5 mtr. Long G.I pipe with 300 x 300 x 6mm thick base plate etc as reuquired .	No.	5			
7.08	Providing and fixing circular / hexagonal M.S sheet ceiling fan box with clamp of internal dia 140 mm,73 mm height, 3 mm thick rim, top and bottom lid of 1.5 mm M.S sheet. Lids shall be screwed into M.S box by means of 3 mm round headed screws, clamps shall be made of 12 mm dia M.S bar bent to shape as per standard drawing with over all length as 80 cm.	No.	4317			
	<b>TOTAL OF SUBHEAD-VII</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
8.00	<b>LT CABLE</b>					
8.01	Supply of the following sizes of PVC insulated and PVC sheathed / XLPE insulated aluminium / copper conductor armoured cables as per IS:7098(part-1)					
	i 3 1/2 x 400 sq.mm	Metre	250			
	ii 3 1/2 x 300 sq.mm	Metre	450			
	iii 3 1/2 x 240sq.mm	Metre	700			
	iv 3 1/2 x 185sq.mm	Metre	500			
	v 3 1/2 x 150sq.mm	Metre	450			
	vi 3 1/2 x 120sq.mm	Metre	1000			
	vii 3 1/2 x 95 sq.mm	Metre	1150			
	viii 3 1/2 x 70 sq.mm	Metre	700			
	ix 3 1/2 x 50 sq.mm	Metre	1060			
	x 4 x 35 sq.mm	Metre	1100			
	xi 4 x 25 sq.mm	Metre	1560			
	xii 4 x 16 sq.mm	Metre	1050			
	xiii 4 x 10 sq.mm	Metre	2050			
	xiv 4 x 25 sq.mm Copper Cable	Metre	900			
	xv 4 x 16 sq.mm Copper Cable	Metre	1000			
	xvi 4 x 10 sq.mm Copper Cable	Metre	750			
	xvii 4 x 6 sq.mm Copper Cable	Metre	350			
8.02	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes on surface as required.					
	i upto 25 sq.mm	Metre	7750			
	ii. from 25 upto 120 sq.mm	Metre	5100			
	iii. from 120 upto 400 sq.mm	Metre	2350			
8.03	Supplying and making end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
i	3 1/2 x 400 sq.mm	Set	18			
ii	3 1/2 x 300 sq.mm	Set	18			
iii	3 1/2 x 240sq.mm	Set	404			
iv	3 1/2 x 185sq.mm	Set	26			
v	3 1/2 x 150sq.mm	Set	24			
vi	3 1/2 x 120sq.mm	Set	22			
vii	3 1/2 x 95 sq.mm	Set	54			
viii	3 1/2 x 70sq.mm	Set	28			
ix	3 1/2 x 50 sq.mm	Set	226			
x	4 x 35 sq.mm	Set	44			
xi	4 x 25 sq.mm	Set	254			
xii	4 x 16 sq.mm	Set	260			
xiii	4 x 10 sq.mm	Set	262			
xiv	4 x 25 sq.mm Copper Cable	Set	64			
xv	4 x 16 sq.mm Copper Cable	Set	260			
xvi	4 x 10 sq.mm Copper Cable	Set	164			
xvii	4 x 6 sq.mm Copper Cable	Set	44			
	<b>TOTAL OF SUBHEAD-VIII</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>9.00</b>	<b>NURSES CALLBELL SYSTEM</b>					
9.01	Supplying , fixing , testing and commissioing of Nurses station terminal monitor with inbuilt Digital display indicator panel suitable for 40 no. of ways complete as per specification.	Set	1			
9.02	Supplying , fixing , testing and commissioing of Nurses station terminal monitor with inbuilt Digital display indicator panel suitable for 35 no. of ways complete as per specification.	Set	30			
9.03	Supplying , fixing , testing and commissioing of Nurses station terminal monitor with inbuilt Digital display indicator panel suitable for 30 no. of ways complete as per specification.	Set	3			
9.04	Supplying , fixing , testing and commissioing of Nurses station terminal monitor with inbuilt Digital display indicator panel suitable for 25 no. of ways complete as per specification.	Set	3			
9.05	Supplying , fixing , testing and commissioing of Nurses station terminal monitor with inbuilt Digital display indicator panel suitable for 15 no. of ways complete as per specification.	Set	22			
9.06	Supply and fixing of Dome light complete with acrylic cover and indication lamp complete as per specifications as required.	Set	220			
9.07	Supply, fixing , testing and commissioing of call bell push button ( with cord) call reset, call indication station for each bed complete as per specification as required.	Set	1575			
9.08	Supply, fixing, testing and commissioing of Toilet switches as per specification and as required.	Set	106			
9.09	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. 4 Pair	Metre	34000			
9.10	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
	i. 20mm	Metre	13600			

Sl.no.		Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	ii.	25mm	Metre	8350			
	iii.	32mm	Metre	2700			
		<b>TOTAL OF SUBHEAD-IX</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
10.00	<b>EARTHING AND MISCELLANEOUS ITEMS.</b>					
10.01	Earthing with G.I. earth plate 600mm x 600mm x 6mm thick including accessories & providing masonry enclosure with cover plate having locking arrangement and watering pipe etc ( but without or coke and salt). complete as required.	Each	56			
10.02	Earthing with copper earth plate 600mm x 600mm x 3mm thick including accessories & providing masonry enclosure with cover plate having locking arrangement and watering pipe etc ( but without or coke and salt). complete as required.	Each	22			
10.03	Extra using charcoal and salt for G.I. or copper plate earth. electrode as required.	Each	78			
10.04	Supplying and laying 25 mm x 5 mm G.I. strip at 0.50m. below ground level as strip earth electrode, including soldering etc. as required.	Metre	850			
10.05	Providing and fixing 25mm x 5mm GI strip in 40 mm dia GI pipe from earth electrode as required.	Metre	950			
10.06	Providing and fixing 25mm x 5mm GI strip on surface or in recess for connection etc. as required.	Metre	8500			
10.07	Providing and fixing 25mm x 5mm copper strip in 40 mm dia GI pipe FRLSom earth electrode as required.	Metre	700			
10.08	Providing and fixing 25mm x 5mm copper strip on surface or in recess for connection etc. as required.	Metre	4950			
10.09	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing alongwith the existing surface / recessed conduit/ submain wiring / cable as required.	Metre	9000			
10.10	Providing and fixing 4.0 mm dia copper wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit / submain wiring/ cable as required.	Metre	3500			
10.11	Providing and fixing MV danger notice plate of 200 mm x 150 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides and with inscription in signal red colour on front side.	Each	66			
10.12	Providing and laying following size 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 and excavation and refilling the soil etc. as required.					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	a) 150mm dia	Metre	210			
	b) 300mm dia	Metre	210			
10.13	Providing & fixing G.I. pipe complete with G.I. fitting including trenching & refilling etc.					
	a) 65 mm dia nominal bore	Metre	150			
10.14	Constructing brick masonry manhole in mortar 1 :4 (1 cement : 4 coarse sand) R.C.C. top slab with 1:2:4 mix (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size ), foundation concrete 1:4:8 mix (1 cement: 4 coarse sand : 8 graded stone aggregate 20 mm nominal size) finished with floating coat of neat cement and making channels in cement concrete 1:2:4: ( 1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size ) finished with floating coat of neat cement complete as per stadard design:					
	a) Inside size 75 x 90 cm and 75 cm deep incuding SFRC Cover with frame ( light duty ) 455 x 610 mm internal dimension total with FPS brick class desination 75.	Set	21			
	b) Inside size 60 x 60 cm and 75 cm deep incuding SFRC Cover with frame ( light duty ) 455 x 610 mm internal dimension with FPS brick class desination 75.	Set	16			
	c) Inside size 60 x 60 cm and 60 cm deep incuding SFRC Cover with frame ( light duty ) 455 x 610 mm internal dimension with FPS brick class desination 75.	Set	12			
10.15	Supply and making cable route marker with cement concrete 1:2:4(1cement : 2coarse sand: 4 graded stone aggregate 20 mm nominal size) of size 60 cm x 60 cm at the bottom and 50 x 50 cm at the top with a thickness of 10 cm including inscription duly engraved as required.	each	1400			
10.16	Supply and fixing cable route marker with 10 x 10 cm x 5 mm thick G.I plate with inscription there on, bolted/welded to 35mm x 35mm x 6mm anngle iron, 60cm long and fixing the same in ground as required	each	1400			
10.17	Fabricating and installation following sizes of perforated MS cable Trays including horizontal and vertical bends , reducers, tees, cross members and others accessories as required and duly suspended from the ceiling with MS suspenders and including painting etc. as required.					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	i. 100 mm width x 50 mm deep x 1.6 mm thickness.	Metre	1400			
	ii. 150 mm width x 50 mm deep x 1.6 mm thickness.	Metre	1050			
	iii. 300 mm width x 50 mm deep x 1.6 mm thickness.	Metre	700			
	iv. 450 mm width x 50 mm deep x 2 mm thickness.	Metre	50			
	v. 600 mm width x 75 mm deep x 2 mm thickness.	Metre	400			
10.18	Supply, fixing, testing and commissioing of 1.5 KVA power Invertor of 50 C/S , 230 Volts , Mosfet Technology with 2 Hrs. Battery backup including SMF batteries and trolly complete as required.	Set	4			
	<b>TOTAL OF SUBHEAD-X</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
11.00	<b>LIGHTNING CONDUCTORS</b>					
11.01	<b>Lightning Arrestor</b>					
	Supplying, Erection, Installation, Testing & commissioning of advance technology lightning protection early stremer emission ( ESE) lightning conductor air termination system including GI Mast minimum 7 mtrs heigh with base plate terminationand other necessary etc. as required.	Nos	6			
11.02	<b>Down Conductor</b>					
	Supply and laying of 70 sq.mm PVC insulated pure electrolytic flexible copper conductor cable for down conductor and laying termination of cable alongwith saddling etc. as required.	Metre	1125			
11.03	<b>Guard pipe</b>					
	Supply and laying of 70 sq.mm PVC onsulated pure electrolytic flexible copper conductor cable for down conductor and laying in 40 mm dia "B" Class GI pipe including road cutting and repairing etc. as required.	Metre	300			
11.04	<b>Maintenance Free Earthing</b>					
	Providing of maintenance Free earth pit material ISOGEL 20 Kg Kit, stainless steel rod 16mm 3 mtrs long 3 nos Bimeatallic u clamps 25x 3mm strip complete as required.	Nos	6			
	<b>TOTAL OF SUBHEAD-XI</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>12.00</b>	<b>CCTV SYSTEM</b>					
12.01	Supply, Installation, Testing and commissioning of 1/3" CCD Indoor Dome camera, 480 TVL,1 lux,AWB / BLC / AGC , 4.0 mm~ 9 mm vari-focal lens, DC12V, PAL as per specification and requirement.	Each	481			
12.02	Supply, Installation, Testing and commissioning of IR Dome Camera, 480 TVL, 0.3lux, 4.3 mm fixed lens, DC12V, PAL as per specification and requirement.	Each	35			
12.03	Supply, Installation, Testing and commissioning of 16-CH (PAL), 400fps display, 400fps recording, MPEG4/H.264, 400fps recording, 1 Audio In/Out, 4 Alarm In, 1 Relay Out, Networkable, with 1 TB hard disc for recording as per specification and requirement.	Each	33			
12.04	Supply, Installation, Testing and commissioning of 21inch Monitor as per specification and requirement.	Each	35			
12.05	Supply and laying of armoured RG 59 tinned copper co-axial cable with polythene insulation. RG 6 only in case of distance between camera and DVR is more than 250mts as per specification and requirement.	Metre	28540			
12.06	Supply and laying of 3 core 1 sqmm. armoured power cable as per specification and requirement.	Metre	2500			
12.07	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
i.	20mm	Metre	13800			
ii.	25mm	Metre	6700			
iii.	32mm	Metre	950			
	<b>TOTAL OF SUBHEAD-XII</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>13</b>	<b>FIRE ALARM AND DETECTION SYSTEM</b>					
13.01	Supply, fixing, testing and commissioning of Microprocessor based, Networkable analogue addressable type fire alarm control panel with 6inch/640 character LCD display, The panel should be equipped with sufficient numbers of loop with 20% spare capacity with each loop shall have a capacity of 159 addressable detectors and 159 addressable devices in one loop.240 volts AC power supply, automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 2 hours during an emergency conditions as required.The panel shall have BMS output for 3rd Party Integration					
	i. 20 Loop Panel (OPD BLOCK)	Set	1			
	ii. 20 Loop Panel (IPD BLOCK)	Set	1			
	iii. 16 Loop Panel (A&E BLOCK)	Set	1			
	iv. 10 Loop Panel (ACADEMIC BLOCK)	Set	1			
	v. 4 Loop Panel (ONCOLOGY BLOCK)	Set	1			
	vi. 2 Loop Panel (HOSTEL BLOCK)	Set	2			
13.02	Supply, fixing, testing and commissioning of Analog addressable photoelectric smoke detector with mounting based LED and Address Switch. (Below False Ceiling)	Nos.	3437			
13.03	Supply, fixing, testing and commissioning of multisensor type Analog addressable Photo-thermal smoke detector with mounting based LED, Address Switch to programme the detectors. (Above False Ceiling)	Nos.	2082			
13.04	Supply, fixing, testing and commissioning of Analog addressable Rate of Rise Cum Fixed temperature Heat detector with mounting based LED, Address Switch to programme the detectors.	Nos.	395			
13.05	Supply, fixing, testing and commissioning of Addressable type fault for isolating shorted, dewired and loose circuits between two successive fault isolators.	Nos.	300			
13.06	Supply, fixing, testing and commissioning of Sounders with strobe complete with modules.	Nos.	445			
13.07	Supply, fixing, testing and commissioning of Addressable control relay modules for AHU & stairs Pressurization Fan (output module).	Nos.	194			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
13.08	Supply , fixing , testing and commissioing of Addressable monitor modules for Sprinkler Flow Switch & WLD Monitoring (input module)	Nos.	44			
13.09	Supply , fixing , testing and commissioing of Response indicator	Nos.	2900			
13.10	Supply , fixing , testing and commissioing of Addressable glass break type Manual Call Point	Nos.	445			
13.11	Supply , fixing , testing and commissioing of Analog Addressable air duct smoke detector with an efficient housing design and sampling tubes mounting based LED, Address Switch , complete as required. (FOR AHU's)	Nos.	93			
13.12	Analog addressable Laser Type Very Early Warning smoke detector with sensitivty range of 0.02% to 2.00% obs/foot, mounting based LED, Address Switch , complete as required by NFPA 76/ NFPA 318 (for Operation Theatres)	Nos.	50			
13.13	Supplying and drawing 2 x 1.5 sq.mm FRLS PVC insulated copper conductor, single core cable in the existing surface / recessed steel conduit as required.	Metre	79400			
13.14	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
i.	20mm	Metre	40000			
ii.	25mm	Metre	26900			
	<b>TOTAL OF SUB HEAD - X111</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>14</b>	<b>PUBLIC ADDRESS SYSTEM</b>					
14.01	Supply, fixing, testing and commissioing of Fire panel supervised 70db-84db Ceiling Mounted Hooter Cum Speakers as specified & same make as of panel.	Nos.	1045			
14.02	Supply, fixing, testing and commissioing of Fire panel supervised 70db-84db Wall Mounted Hooter Cum Speakers as specified & same make as of panel.	Nos.	451			
14.03	Supply, installation, testing & comissioning of Integrated 8 channel Digital Voice Evacuation and 2 way Communication Fire Fighters System capable to supervision of all the speaker circuits, with required suitable amplifiers for 200 speakers and accessories required to compelete the system. The equipment shall be of same make as panel.	Set	7			
14.04	Supply , fixing , testing and commissioing of 2 way communication Fire Fighter's Telephone Jack complete with modules	Nos.	470			
14.05	Supply , fixing , testing and commissioing of 2 way communication Fire Fighter's Handset	Nos.	45			
14.06	Supplying and drawing 2 x 1.5 sq.mm FRLS PVC insulated copper conductor, single core cable in the existing surface / recessed steel conduit as required.	Metre	30800			
14.07	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
i.	20mm	Metre	18800			
ii.	25mm	Metre	6200			
	<b>TOTAL OF SUB HEAD XIV.</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>15</b>	<b>SOUND AND PROJECTION SYSTEM</b>					
<b>15.01</b>	<b>SOUND ENGINEERING</b>					
i.	Supply installation testing commissioning of floor mounted metallic rack having the following equipment but not limited to the equipment for the complete system as require (one for each lecture room)	Nos	6			
ii.	Supply,intalltion,testing and commissioning Programmable Universal Audio Processor 8IN/ 8OUT complete system as required.	Nos	6			
iii.	Supply, installation resting and commissioing of Paging matrix. 8 zone. Inputs for 4 line sources & 8 x PageNet88M'. 8 zone outputs (One in each lecture room) complete system as required.	Nos	6			
iv.	Supply, installation, testing and commissioning of Power amplifier 120W/100V-230/24V- 19"/2U (One for each lecture room) complete system as required.	Nos	5			
v.	Supply, installation, testing and commissioning of Power amplifier 240W/100V-230/24V- 19"/2U (One for each lecture room) complete as per specification and requirement.	Nos	1			
vi.	Supply, installation testing and commissioning of JD20/T 100 volt line Black 5" Music Cabinet Speaker black, 100V/20W (Four for each lecture room) complete system as required.	Nos	23			
vii.	Supply, installation testing and commissioning of wall mount speaker 35watt 100 volt logarithmic placement drivers vertical loudspeaker array 120deg @-10deg Azimuth angle complete system as required.	Nos	12			
viii.	Supply, installation testing and commissioning of DSM2000 Paging Microphone P.T.T with one push button and lock button (One for each lecture room) complete system as required.	Nos	6			
ix.	Supply, installation testing and commissioning of WMS 81 HT + D 880 WL1 Handheld Type Wireless Microhone complete system as required.	Nos	6			
<b>15.02</b>	<b>POROJECTION SYSTEM</b>					



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
i.	Supply , Installation , Testing & Commissioning of DLP Projector, Resolution of 1024 X 768Pixels , 4000 ANSI Lumens , single UHP , 2000:1 contrast Ratio, RGB Inputs , DVI Inputs , Brightness 85% uniformity , Complete with cordless remote control and mounting bracketeacd as per specification compplete as required.	Nos	6			
ii.	Supply , Installation Testing & Commissioning of Motorised Projection Screen with seamless white Matt fabric , 7' ( W ) x 5' (H) and as per the specifications, complete as required (one in each lecture room).	Nos	6			
iii.	Supply, installation, testing & commissioning of Patch Panel , surface access enclosure , openable with press down on the top of the enclosure with one data input on HD 15 connector , one video input on RCA connector , two cat 6 RJ 45 connector for LAN.( one for each lecture hall room)	Nos	6			
<b>15.03</b>	<b>LIGHTING CONTROLS/ AUTOMATION</b>					
i.	Supply, installation, testing and commissioning of approved Vity make 7" LCD colour touch panel - IR out, MBC Bus and RS 232 ports - GPI or IR in port - 4 video CVBS inputs - Delivered with EXBOX RS and power supply - Direct learning of IR codes completed as per specification and requirement.	Nos	6			
ii.	The RAV232+ is a bi-directional RS232 RF gateway for system integration applications completed as per specification and requirement.	Nos	6			
iii.	Supply, installation, testing and commissioning of approved make The RDL250C in-line RF dimmer for Tungsten, Low Voltage Halogen and other leading edge dimmable loads completed as per specification and requirement.	Nos	60			
iv.	Supply, installation, testing and commissioning of approved makeThe RDS800C in-line RF switch module for non dimmable loads completed as per specification and requirement.	Nos	60			
v.	RDLDSI in line module for dimming of florescent circuits (for 4 halls) completed as per specification and requirement.	Nos	30			
vi.	Supply, installation, testing and commissioning of approved make ballasts for dimming the florescent lights (for 4 halls) completed as per specification and requirement.	Nos	160			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
vii.	Supply, installation, testing and commissioning of approved make The RACUB in-line RF relay module for motorised, screens (for 4 halls) completed as per specification and requirement.	Nos	6			
viii.	supply, installation testing and commissioning of 4 pair UTP cable completed as per specification and requirement.	Metre	500			
ix.	supply, installation testing and commissioning of power cables 2x1.5sqmmwire completed as per specification and requirement.	Metre	1000			
x.	supply, installation testing and commissioning of coaxial cables completed as per specification and requirement.	Metre	1000			
xi.	supply, installation, testing and commissioning of VGA cables completed as per specification and requirement.	Metre	500			
xii.	supply, installation testing and commissioning of S Video cables completed as per specification and requirement.	Metre	800			
xiii.	supply, installation testing and commissioning of Speaker cables completed as per specification and requirement.	Metre	1500			
xiv.	supply, installation testing and commissioning of 25 mm dia. MS conduits 25mm dia completed as per specification and requirement.	Metre	500			
xv.	supply, installation testing and commissioning of connectors D value 15 pin completed as per specification and requirement.	Nos	16			
xvi.	supply, installation testing and commissioning of connectors 9 pin D sub male/female completed as per specification and requirement.	Nos	16			
xvii.	supply, installation testing and commissioning of connectors S video completed as per specification and requirement.	Nos	16			
xviii.	supply, installation, testing and commissioning of microphone cables completed as per specification and requirement.	Metre	400			
xix.	supply, installation testing and commissioning of RCA connectors completed as per specification and requirement.	Metre	100			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>TOTAL OF SUB HEAD XV.</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>16</b>	<b>SOLAR PHOTOVOLATAIC POWER SYSTEM</b>					
16.01	Design, Engineering & Supply of 37.95 KWp Solar Power Pack capable of running 5 KW load for 24 hours duration as per specifications and requirement.	Set	2			
16.02	Design, Engineering & Supply of 57.75 KWp Solar Power Pack capable of running 7.5 KW load for 24 hours duration as per specifications and requirement.	Set	6			
	<b>TOTAL OF SUB HEAD XVI.</b>					
<b>17</b>	<b>UNINTERRUPT POWER SUPPLY SYSTEM ( UPS)</b>					
17.01	Supply Installation,testing & Commissioning of microprocessor based 30 kVA UPS, with IGBT based Rectifier and Inverter or 6Pulse Rectifier with 5th Harmonic Filter along with ACTIVE Filter (Vendor to Define Rating of Active Filter with specifications). UPS Should be True Online Double Conversion (VFI as per IEC62040-3). 3Phase input & 3 Phase output each comprising of the following.					
a	THD(i) shall be less than 5% @ 100% load.					
b	Input power factor shall be more than 0.98. from 50% to 100% load					
c	Shall have Soft start Facility for Compatibility with Generators					
d	Invertor capability to supply 150% load for 30 sec.					
e	Shall not allow deep discharge of the battery. There should be a external MCCB available with UV trip coils. The MCCB should disconnect itself in case of UV or emergency conditions.					
f	Shall have inbuilt SNMP, Modbus Cards installed for monitoring on BMS.					
g	UPS to have inbuilt Static By-pass enabled	Set	9			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
17.02	Supply, fixing, testing and commissioning of battery Bank of 30KVA UPS at 0.80 output power factor strictly as per specification given in the document. Each individuals UPS of 30KVA shall have 15 min. battery back up. Battery Racks, Intercell & Inter Tier Connectors for the battery Banks, External MCCB with UV coils and UPS to Battery Cables for a distance of 20 mtrs. The battery shall comprise of 12 volt cell and size and combination of bank in terms of VAH shall be clearly mentioned with battery claculation with invertor efficiency as 0.94 or less, end of cell voltage shall be taken as 10.5 volts.	Set	9			
17.03	Supply Installation,testing & Commissioning of microprocessor based 10 kVA UPS, with IGBT based Rectifier and Inverter only. UPS Should be True Online Double Conversion (VFI as per IEC62040-3). 3Phase input & 1 Phase output each comprising of the following.					
a	THD(i) shall be less than 5% @ 100% load.					
b	Input power factor shall be more than 0.98. from 50% to 100% load					
c	Shall have Soft start Facility for Compatibility with Generators					
d	Invertor capability to supply 150% load for 30 sec.					
e	Shall not allow deep discharge of the battery. There should be a external MCCB available with UV trip coils. The MCCB should disconnect itself in case of UV or emergency conditions.					
f	Shall have inbuilt SNMP, Modbus Cards installed for monitoring on BMS.					
g	UPS to have inbuilt Static By-pass enabled	Set	5			
17.04	Supply, fixing , testing and commissioning of battery Bank of 10KVA UPS at 0.80 output power factor strictly as per specification given in the document. Each individuals UPS of 10KVA shall have 15 min. battery back up. Battery Racks, Intercell & Inter Tier Connectors for the battery Banks, External MCCB with UV coils and UPS to Battery Cables for a distance of 20 mtrs. The battery shall comprise of 12 volt cell and size and combination of bank in terms of VAH shall be clearly mentioned with battery claculation with invertor efficiency as 0.94 or less, end of cell voltage shall be taken as 10.5 volts.	Set	5			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
	<b>TOTAL OF SUB HEAD XVII.</b>					

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
<b>18</b>	<b>LIFTS AND ELEVATORS</b>					
18.01	Supplying, fixing, testing and commissioning of 26 Passangers lift, <b>Duplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 10 stop and 10 opening, Stainless steel car enclosure in hair line finish, flourscent light and fans, Automatic car entrance center opening door in stain less steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stain less steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with dirictional indicator at all landing, Brasual fixtures in COP & LOP.	Set	10			
18.02	Supplying, fixing, testing and commissioning of 26 Passangers lift, <b>Triplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 10 stop and 10 opening, Stainless steel car enclosure in hair line finish, flourscent light and fans, Automatic car entrance center opening door in stain less steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stain less steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with dirictional indicator at all landing, Brasual fixtures in COP & LOP.	Set	15			

Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
18.03	Supplying, fixing, testing and commissioning of 26 Passangers lift, <b>Duplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 4 stop and 4 opening, Stainless steel car enclosure in hair line finish, flourscent light and fans, Automatic car entrance center opening door in stain less steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stain less steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with dirictional indicator at all landing, Brasual fixtures in COP & LOP.	Set	4			
18.04	Supplying, fixing, testing and commissioning of 8 Passangers lift, <b>Duplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 8 stop and 8 opening, Stainless steel car enclosure in hair line finish, flourscent light and fans, Automatic car entrance center opening door in stain less steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stain less steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with dirictional indicator at all landing, Brasual fixtures in COP & LOP.	Set	6			



Sl.no.	Description Of Item	Unit	Total Qty	Rate in Fig Rs	Rate in Words (Rs)	Amount in Fig Rs
18.05	Supplying, fixing, testing and commissioning of 8 Passangers lift, <b>Triplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 8 stop and 8 opening, Stainless steel car enclosure in hair line finish, fluorescent light and fans, Automatic car entrance center opening door in stainless steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stainless steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with directional indicator at all landing, Brasual fixtures in COP & LOP.	Set	3			
18.06	Supplying, fixing, testing and commissioning of 8 Passangers lift, <b>Triplex</b> , speed 1 meter / sec, variable voltage variable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 5 stop and 5 opening, Stainless steel car enclosure in hair line finish, fluorescent light and fans, Automatic car entrance center opening door in stainless steel hairlines finish, The car entrance shall be variable frequency door drive with infrared beam safety ( fire rated door), Landing with Automatic centre opening door stainless steel hairline finish ( fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car ( Audiovisual type), Automatic rescue device, Floor position indicator along with directional indicator at all landing, Brasual fixtures in COP & LOP.	Set	6			
18.07	Supplying, fixing, testing and commissioning of Dumb waiter of Capacity 250 Kgs, Stop & opening 10 stops - 10 openings, Floor designation 2 basement + Ground to 8th floor complete as per requirement.	Set	1			
	<b>TOTAL OF SUB HEAD XVIII.</b>					

Construction of Hospital Building, Academic Block & Students Hostel with associated Services Under Comprehensive redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals, New Delhi						
BOQ FOR SUBSTATION, EXTERNAL ELECTRICAL & LOW CURRENT WORKS FOR HOSPITAL AREA						
Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>1</b>	<b>33 KV FIVE HT PANEL BOARD</b>					
1.01	Supplying, erection, testing and commissioning of 630A, 33KV, 3 phase, 50 Hz. metal clad, dead front, 5 Board, VCB Panel, 1500MVA rupturing capacity having two incomings, two out going and bus coupler as per specifications and schematic diagram.	1	Set			
1.02	Supplying, erection, testing and commissioning of 7.5/10 MVA, 33 KV/ 11KV, 3 phase, 4 wire 50 Hz transformer with onload tap change over with cable box at primary and secondary end, Winding Temperature Indicator, restricted earth fault protection, bucholz relay, silica breather, Marshel Box to connect control cable between HT panel and Transformer as per specification etc. completed as required.	2	Set			
1.03	Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 8 Board, VCB Panel, 350MVA repturing capacity having two incoming, one bus coupler and five outgoing as per specification and requirement.	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
1.04	Suplying, delivery, erection testing and commissioning of the following for metering and protection.					
a.	SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
b.	Float Trick charger suitable for above items for 30 volts DC.					
c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	1	Set			
1.05	Supplying of 3C x 400 sq.mm XLPE Al. armoured cable, 33 KV grade, conforming to IS : 7098 Part-II and as per specification	200	Metre			
1.06	Supplying of 3C x 400 sq.mm XLPE Al. armoured cable, 11 kV grade conforming to IS : 7098 Part-II and as per specification	1550	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
1.07	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in the ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.	660	Metre			
1.08	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in ground in same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.	660	Metre			
1.09	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size not exceeding 400 sq.mm in the existing RCC/HUME/STONEWARE/METAL pipe as required.	100	Metre			
1.10	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size not exceeding 400 sq.mm in the existing masonry open duct as required.	130	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
1.11	Laying of one number XLPE power cable of grade exceeding 11 KV but not exceeding 33 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in the ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.	76	Metre			
1.12	Laying of one number additional XLPE power cable of grade exceeding exceeding 11 KV but not exceeding 33 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in ground in same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.	52	Metre			
1.13	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 11 KV but not exceeding 33 KV of size not exceeding 400 sq.mm in the existing masonry open duct as required.	72	Metre			
1.14	Supplying and making INDOOR cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core x 400 sq.mm, XLPE aluminium conductor cable of 11 KV grade as required.	16	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
1.15	Supplying and making INDOOR cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core x 400 sq.mm, XLPE aluminium conductor cable of 33 KV grade as required.	8	Set			
	<b>TOTAL OF 33 KV FIVE HT PANEL BOARD</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>2.00</b>	<b>HT PANEL BOARD FOR 11 KV SUBSTATIONS</b>					
2.01	<b>11 KV EIGHT HT PANEL BOARD ( Main Receiving Panel board from NDMC)</b>					
	i Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 8 Board,VCB Panel, 350MVA repturing capacity having two incoming,one bus coupler and Five outgoing as per specification and requirement.	1	Set			
	ii Suplying, delivery, errection testing and commissioning of the following for metering and protection.					
	a. SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
	b. Float Trick charger suitable for above items for 30 volts DC.					
	c. DC distribution board suitable for above application to including tripping, closing and indication etc.					
	d. Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
	e. Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	1	Set			
	<b>Sub total of 33 KV/11 KV substation</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
2.02	<b>11 KV ELEVEN HT PANEL BOARD ( 11 KV DG Panel)</b>					
	i Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 11 Board, VCB Panel, 350MVA reasuring capacity having four incoming, three bus coupler and four outgoing as per specification and requirement.	1	Set			
	ii Suplying, delivery, erection testing and commissioning of the following for metering and protection.					
	a. SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
	b. Float Trick charger suitable for above items for 30 volts DC.					
	c. DC distribution board suitable for above application to including tripping, closing and indication etc.					
	d. Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
	e. Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	1	Set			



Sl.no.		Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
2.03	i	Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 3 Board, VCB Panel, 350MVA reasuring capacity having two incoming, one bus coupler and Five outgoing as per specification and requirement.	4	Set			
	ii	Suplying, delivery, erection testing and commissioning of the following for metering and protection.					
	a.	SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
	b.	Float Trick charger suitable for above items for 30 volts DC.					
	c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
	d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
	e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
2.04	<b>11 KV FIVE HT PANEL BOARD (SUBSTATION 1 &amp;3)</b>					
i	Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 5 Board,VCB Panel, 350MVA repturing capacity having two incoming, one bus coupler and two outgoing as per specification and requirement.	2	Set			
ii	Suplying, delivery, errection testing and commissioning of the following for metering and protection.					
a.	SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
b.	Float Trick charger suitable for above items for 30 volts DC.					
c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	2	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
2.05	<b>11 KV EIGHT HT PANEL BOARD (SUBSTATION - 2)</b>					
i	Supplying, erection, testing and commissioning of 800A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 8 Board, VCB Panel, 350MVA reasuring capacity having two incoming, one bus coupler and five outgoing as per specification and requirement.	1	Set			
ii	Supplying, delivery, erection testing and commissioning of the following for metering and protection.					
a.	SMF 24 V storage maintenance free battery of 300 AH capacity suitable for 33 KV and 11 KV Panels.					
b.	Float Trick charger suitable for above items for 30 volts DC.					
c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 2.5 sq.mm copper cable .					
e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	1	Set			
	<b>TOTAL OF HT PANEL BOARD FOR 11 KV SUBSTATIONS</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>3.00</b>	<b>TRANSFORMER FOR 11KV/433 VOLTS SUBSTATIONS</b>					
3.01	SITC of Cast Resin Dry Type 2000 KVA 11/0.433 KV, 3 Phase, 50 Hz, Dyn11 vector group, copper, class F insulation associated with winding temperature indicator/controller actuated by means of resistance temperature detector embedded in LV windings, indoor type Transformer with approximately 6.25% impedance, tappings for off load operation on HV side in steps of +/- 2.5%, +/- 5% & -15% having cable end boxes on HV side suitable for 3 x 240 Sq.mm XLPE cable of 11 KV grade and 3200 Amp bus trunking arrangement on LV side with neutral brought out seperately including supplying and laying of copper conductor multicore control cable from transformer to HT breaker for safety tripping suitably mounted on M.S channel i/c supplying and grouting of suitable M.S channel with all accessories and conforming to IS 11171:1985 & as per specification attached complete in all respect as required at site.	7	Sets			
	<b>TOTAL OF TRANSFORMER FOR 11KV/433 VOLTS SUBSTATIONS</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>4.00</b>	<b>11 KV CABLE / LT CABLE</b>					
4.01	Supplying of 3C x 400 sq.mm XLPE Al. armoured cable, 11 kV grade conforming to IS : 7098 Part-II and as per specification	3064	Metre			
4.02	Supplying of 3C x 240 sq.mm XLPE Al. armoured cable, 11 kV grade conforming to IS : 7098 Part-II and as per specification	490	Metre			
4.03	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in the ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.	1453	Metre			
4.04	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in ground in same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.	1203	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
4.05	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size not exceeding 400 sq.mm in the existing RCC/HUME/STONEWARE/METAL pipe as required.	190	Metre			
4.06	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of grade exceeding exceeding 1.1 KV but not exceeding 11 KV of size not exceeding 400 sq.mm in the existing masonry open duct as required.	708	Metre			
4.07	Supplying and making INDOOR cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core x 400 sq.mm, XLPE aluminium conductor cable of 11 KV grade as required.	44	Set			
4.08	Supplying and making INDOOR cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core x 240 sq.mm, XLPE aluminium conductor cable of 11 KV grade as required.	18	Set			
4.09	Supply of the following size XLPE insulated power cable of 1.1 KV grade aluminium conductor armoured cables as per IS:7098(part-1)					
i.	3 1/2 x 400 sq.mm	5000	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
ii.	3 1/2 x 300 sq.mm	9050	Metre			
iii.	3 1/2 x 240 sq.mm	2650	Metre			
iv.	3 1/2 x 185 sq.mm	850	Metre			
v.	3 1/2 x 150 sq.mm	200	Metre			
vi.	3 1/2 x 120 sq.mm	200	Metre			
vii.	3 1/2 x 95 sq.mm	200	Metre			
viii.	3 1/2 x 70 sq.mm	200	Metre			
ix.	3.5 x 50 sq.mm	300	Metre			
x.	4 x 35 sq.mm	200	Metre			
xi.	4 x 25 sq.mm	200	Metre			
xii.	4 x 16 sq.mm	1000	Metre			
xiii.	4 x 10 sq.mm armoured Copper Cable	800	Metre			
xiv	1 x 150 sq.mm unarmoured Copper Cable	2000	Metre			
xv	1 x 300 sq.mm unarmoured Copper Cable	1500	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
4.10	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes in Ground as required.					
	i upto 25 sq.mm	2000	Metre			
	ii. from 25 upto 120 sq.mm	450	Metre			
	iii. from 120 upto 400 sq.mm	7000	Metre			
4.11	Laying of one number additional XLPE power cable of 1.1 KV grade of following sizes direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
	i upto 25 sq.mm	2000	Metre			
	ii. from 25 upto 120 sq.mm	450	Metre			
	iii. from 120 upto 400 sq.mm	7000	Metre			
4.12	Laying of one number XLPE power cable of 1.1 KV grade of following sizes in the existing RCC/HUME/STONEWARE/METAL pipe as required.					
	i upto 25 sq.mm	500	Metre			
	ii. from 25 upto 400 sq.mm	850	Metre			
4.13	Laying of one number XLPE power cable of 1.1 KV grade of following sizes on surface as required.					
	i upto 25 sq.mm	1000	Metre			
	ii. from 25 upto 120 sq.mm	100	Metre			
	iii. from 120 upto 400 sq.mm	3000	Metre			



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
4.14	Supplying and making end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					
	i. 3 1/2 x 400 sq.mm	90	Set			
	ii 3 1/2 x 300 sq.mm	120	Set			
	iii. 3 1/2 x 240 sq.mm	40	Set			
	iv. 3 1/2 x 185 sq.mm	10	Set			
	v. 3 1/2 x 150 sq.mm	6	Set			
	vi. 3 1/2 x 120 sq.mm	4	Set			
	vii. 3 1/2 x 95 sq.mm	8	Set			
	viii. 3 1/2 x 70 sq.mm	6	Set			
	ix. 3.5 x 50 sq.mm	10	Set			
	x. 4 x 35 sq.mm	4	Set			
	xi. 4 x 25 sq.mm	10	Set			
	xii. 4 x 16 sq.mm	50	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
xiii.	4 x 10 sq.mm armoured Copper Cable	10	Set			
xiv	1 x 150 sq.mm unarmoured Copper Cable	75	Set			
xv	1 x 300 sq.mm unarmoured Copper Cable	100	Set			
4.15	Supply and making cable route marker with cement concrete 1:2:4 ( 1 cement : 2 course sand: 4 graded stone aggregate 20mm nominal size) of size 60 cm x 60cm at the bottom and 50cm x 50cm at the top with a thickness of 10 cm including inscription duly engraved as required.	500	Each			
4.16	Supply and making cable route marker with 10cm x 10cm x 5mm thick G.I. plate with inscription thereon, bolted/ welded to 35mmx35mm 6mm angle iron, 60cm long and fixing the same in ground as required.	500	Each			
	<b>TOTAL OF 11 KV CABLE / LT CABLE</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>5</b>	<b>EARTHING AND MISCELLANEOUS ITEMS.</b>					
5.01	Supply, Installation, Testing & Commissioning of long life, Maintenance Free Electrolytic Earthing System with 30 year service warranty with 10 feet Vertical “K” Type Copper Not less than 2” (50.8mm) ID and not less than 0.08” (2.03mm) wall thickness, which does not require manual addition of water. The system should be Corrosion resistant pre-filled with hygroscopic powder and provided with suitable Breathing & Leaching Ports at the ends. Rated for high fault currents 50 KA . The earthing pit shall be designed and supplied with Poly-plastic Pit Cover 10”(TD)x10”(H)x13”(BD) non conductive, environment friendly and lockable	85	Each			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
5.02	Supply, Installation, Testing & Commissioning of long life maintenance Free Electrolytic Earthing System with 30 year service warranty 10 feet Vertical GI electrode Not less than 2" (50.8mm) ID and not less than 0.08" (2.03mm) wall thickness, which shall not require manual addition of water. No cement & ben tonite backfill compund.The system should be Corrosion resistant pre-filled with hygroscopic powder and provided with suitable Breathing & Leaching Ports at the ends.. Rated for high fault currents - 50mmx5mm bus bar rated for 50kA fault current. Bus Bar connection type as "TerraWeld" to with hold temperatures lot less 700° C. he earthing pit shall be designed and supplied with Poly-plastic Pit Cover 10"(TD)x10"(H)x13"(BD) as "910-TB" non conductive, environment friendly and lockable	110	Each			
5.03	Supplying and laying 25 mm x 5 mm G.I. strip at 0.50m. below ground level as strip earth electrode, including soldering etc. as required.	1000	Metre			
5.04	Providing and fixing 25mm x 5mm GI strip in 40 mm dia GI pipe from earth electrode as required.	100	Metre			
5.05	Providing and fixing 25mm x 5mm GI strip on surface or in recess for connection etc. as required.	500	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
5.06	Providing and fixing 25mm x 5mm copper strip in 40 mm dia GI pipe from earth electrode as required.	100	Metre			
5.07	Providing and fixing 25mm x 5mm copper strip on surface or in recess for connection etc. as required.	500	Metre			
5.08	Providing and fixing 50mm x 6mm G.I strip in 80 mm dia GI pipe from earth electrode as required.	200	Metre			
5.09	Providing and fixing 50mm x 6mm copper strip in 80 mm dia GI pipe from earth electrode as required.	200	Metre			
5.10	Providing and fixing 50mm x 6mm GI strip on surface or in recess for connection etc. as required.	200	Metre			
5.11	Providing and fixing 50mm x 6mm copper strip on surface or in recess for connection etc. as required.	200	Metre			
5.12	Providing and fixing 4.0 mm dia copper wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit / submain wiring/ cable as required.	800	Metre			
5.13	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing alongwith the existing surface / recessed conduit/ submain wiring / cable as required.	2000	Metre			
	<b>CABLE TRAYS</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
5.14	Fabricating and installation following sizes of perforated MS cable Trays including horizontal and vertical bends, reducers, tees, cross members and others accessories as required and duly suspended from the ceiling with MS suspenders and including painting etc. as required.					
	i. 100 mm width x 50 mm deep x 1.6 mm thickness.	300	Metre			
	ii. 150 mm width x 50 mm deep x 1.6 mm thickness.	200	Metre			
	iii. 300 mm width x 50 mm deep x 1.6 mm thickness.	225	Metre			
	iv. 450 mm width x 50 mm deep x 2 mm thickness.	30	Metre			
5.15	Supplying, fabrication and installation of MS fabricated including welding grouting and painting etc. as required.	10000	Kg			
	<b>SAFETY EQUIPMENT</b>					
5.16	Providing and fixing danger notice plates made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides and with inscription in signal red colour on front side.					
	(a) High Voltage-size 250mm x 200mm	50	Each			
	(b) Medium Voltage-size 200mm x 150mm	50	Each			
5.17	Supplying and fixing carbondioxide fire extinguisher type 4.5 kgs capacity of approved make with wall mounting bracket as required conforming to IS:2878/1976	40	No.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
5.18	Supplying and fixing of foam fire extinguishers, portable type 9 Lit capacity hanged on wall with bracket complete as required.	20	No			
5.19	Supply and fixing safety instruction chart in word duly framed with 5mm thick glass as required. (approx. Front area 1.20 sq.mt.)	6	No			
5.20	Providing of set of 4 Nos.. 9.5 Litre capacity GI bucket painted in post office red colour with prior coat of red-oxide paint and written with white paint 'FIRE' and mounted on MS angle iron frame with bracket of appropriate size & capacity i/c filling sand etc as required conforming to IS:254/1974.	6	Set			
5.21	First Aid Box as approved by St.John Ambulance Bridge/Indian Red Cross conforming to IS:2217-1963.	6	Set			
5.22	Supplying and fixing shock treat chart written in English and Local language duly mounted on wooden frame with 5mm thick glass as required. (approximate front area 1.20 Sq.meter).	10	No			
5.23	Providing of non-skid rubber mat 1 mtr wide and 12mm thick to withstand 15 KV dielectric strength as per IS5424-1969.	100	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
5.24	Providing of non-skid rubber mat 1 mtr wide and 6mm thick to withstand 3.3 KV dielectric strength as per IS5424-1969.	100	Metre			
	<b>TOTAL OF EARTHING AND MISCELLANEOUS ITEMS.</b>					



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
6	<b>BUS DUCT</b>					
6.01	Supplying, installation, including suspension, testing and commissioning of Sandwich type bus trunking arrangement in convenient sections with aluminium busbars for use on 3 phase, 4 wire, 415 volt,50 Hz, A.C supply for following current capacity, including jointing of sections, flexible joints, expansion joints, bends and earthing with 2 runs of galvanised iron strips etc as required.					
	i. 2500 Amp.	160	Metre			
	<b>TOTAL OF BUS DUCT</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>7.00</b>	<b>D.G. SET</b>					
7.01	Supplying, installation, erection, testing and commissioning of water cooled Diesel Engine with rated capacity of 2000 KVA at 0.8 P.F., 1500 RPM. 4 stroke, multicylinder coupled to brush less type 11000 volts 50 cycle/second self excited alternator completed with cushy padds, domestic silencer complete with Alternator auxiliaries, heat exchanger, electronic governer to be operated on sysnch. panel,24 volts chargable battery including initital charging of batteries, control panel complete as per specification.	4	Set			
7.02	Supply, fixing and commissioning 990 ltrs capacity 16 SWG MS steel, Disel oil Tank with manhole, PVC gauge, inlet and outlet connections with gate valve, drain plug, piping between tank and engine vent etc. mounted on suitable MS staging to maintain gravity flow of diesel oil from tank to DG set including painting etc. as required.	4	Each			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	<b>COOLING TOWERS &amp; MISCELLANEOUS WORK.</b>					
7.03	Supplying, Fixing, Testing and commissioing of vertical induced type FRP Cooling towers of capacity 200 TR complete with fan and motor assembly as required.	4	Nos			
7.04	Supplying, Fixing, Testing and commissioing of Mono Block type water circulating pumps with Bronze impellers, mechanica; seals suitable for header high 30 mtrs and discharge 3000 ltrs per minutes completed as required.	5	Nos			
7.05	Supplying, Fixing, Testing and commissioing of Class - C MS Black pipes as per IS - 1239 complete with fittings, welding, hangers and supports complete as per specifications in following sizes..					
	i. 150mm dia.	600	Mtrs.			
	ii. 125mm dia.	300	Mtrs.			
	iii. 100mm dia.	350	Mtrs.			
	iv. 80mm dia.	50	Mtrs.			
	v. 50mm dia.	50	Mtrs.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	vi. 25mm dia.	200	Mtrs.			
7.06	Supplying, Fixing, Testing and commissioing of followngs valves complete with fittings and other acessories as per specifications of following sizes.					
	i. Gate Valves bore size 40mm dia.	8	Nos			
	ii. Gate Valves bore size 50mm dia.	4	Nos			
	iii. Gate Valves bore size 125mm dia.	1	Nos			
	iv. Gate Valves bore size 150mm dia.	3	Nos			
	v. Balancing Valve bore size 150mm dia	3	Nos			
	vi. Balancing Valve bore size 125mm dia	7	Nos			
	vii. Balancing Valve bore size 100mm dia	2	Nos			
	viii. Butterfly valve bore size 150mm dia.	9	Nos			
	ix. Butterfly valve bore size 125mm dia.	3	Nos			
	x. Butterfly valve bore size 100mm dia.	23	Nos			
	xi. Y - Stainers bore size 100mm dia.	12	Nos			
	xii. Cheak Valve bore size 100mm dia.	12	Nos			
	xiii. Flexible below size 125mm	20	Nos			
	xiv. Flexible below size 100mm	12	Nos			
7.07	Supplying, Fixing, Testing and commissioing of followngs Meters and swithes complete with fittings and other acessories as per specifications of following sizes.					
	i. Flow switches	8	Nos			
	ii. Pressure Gauge	40	Nos			
	iii. Thermometer	16	Nos			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
7.08	Supply, erection and commissioning additional MS exhaust piping in following sizes with heat resistive glass wool and then cladded with Al. Foil all along the pipe including fixing of pipe on support structure with MS clamps complete as per specification as required.					
	i. 450mm dia Class - B MS pipe.	300	Mtr.			
	ii. 250mm dia Class - B MS pipe.	100	Mtr.			
	iii. 200mm dia Class - B MS pipe.	50	Mtr.			
	iv. SS Flexible below150mm long 200mm dia	6	Nos			
	v. SS Flexible below150mm long 250mm dia	6	Nos			
	vi. Support structure material	16000	kgs			
7.09	Sound proofing of the DG room with glass wool and the other items	650	SqM			
7.10	Providing the Airwasher for DG room as size belows as per the DG room drawing.					
	i. For 4 x 2000 KVA, DG Room size as per drawing enclosed.	1	Set			
7.11	Supply, installation testing and commissioning of 20 KL (6 mm thick shell & 8 mm thick dished shell )HSD storage tank as per IS-1087.	2	Set			
7.12	Supply, installation testing and commissioning of 5 KL (6 mm thick shell & 8 mm thick dished shell )HSD storage tank as per IS-1087.	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
7.13	Supply installation testing and commissioing of electrical rotary gear pumps of 45 lpm at 15 mts head with civil foundation, on/off flame proof mcc box, pressure gauge etc.	4	Set			
7.14	Supply, fising testing and comssioing of NGR and NIS Panel for the Above DG Set as per enclosed specictaions enclosed.	4	Set			
	<b>TOTAL OF D.G.SET</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
8	<b>MAIN LT PANELS, FEEDER PILLARS, MAIN DISTRIBUTION BOARDS</b>					
	Supplying, installation, testing and commissioning of M.V. cubical type totally enclosed dust, dump and vermin proof Main Distribution Boards / LT Panel and synchronising panel complete with bus bars, MV danger notice plate, Digital type Multifunction meter, Ammeter, Ammeter selector switch, voltmeter, Voltmeter selector switch, indicating lamps, CT's, Interconnection with suitable capacity aluminium strips / rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switch fuse/ fuse and MCBs MCCBs complete as required.					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
8.01	<b>MAIN LT PANELS</b>					
	Supplying, Installation, testing and commissioning of M.V. cubical type totally enclosed free standing type, dust, dump and vermin proof Main LT Panel complete with bus bars, MV danger notice plate, Ammeter, Ammeter selector switch, voltmeter, Voltmeter selector switch, P.F. meter indicating lamps, CT's, Interconnection with suitable capacity aluminium strips / rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing ACB, MCCB, switch fuse/ fuse with complete as required.					
	i. <b>Main LT Distribution Panel (ESS-1) Near Academic Block</b>					
	<b>INCOMING:</b>					
	2 nos. 3200A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with Overvoltage and undervoltage protection.					
	2 nos. 0-500V Digital type Voltmeter with selector switch.					
	2 nos. 0-3200A Digital type Ammeter with selector switch with CT's 3200/5A					
	2 nos. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	2 sets of phase indicating lamps with MCB protection.					



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	2 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	2 nos. Restricted earth fault relays.					
	2 nos. Tripping or Trip Free relays.					
	2 nos Trip Circuit Supervision relays.					
	<b>BUSBARS:</b>					
	2 Set of TPN aluminium bus bar of minimum of 4000 Amps capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc for withstanding fault level of 31 MVA for 1 Sec.					
	<b>BUS COUPLER :</b>					
	1 no. 3200A 660V, 4P 50kA MDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection ON /OFF/TRIP Indications with MCB.					
	<b>OUTGOING:</b>					
	2 nos. 1600A 660V, TP MDO ACB of 50kA ON/OFF/TRIP indication lamp with MCB					
	2 nos. 2000A 660V, TP EDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	5 nos. 630A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 no. 250A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 no. 200A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 nos. 125A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos.100A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	1	Set			
ii.	<b>Capacitor Panel - 1 &amp; 2</b>					
	<b>INCOMER :</b>					
	1 No 1600A 660 Volts, TP MDO ACB					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	1 no. 0-1600A Digital type Ammeter with selector switch with CT's 1600/5A					
	1 Set of phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	2000A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 100kVAR capacitor bank with 250A TP MCCB and Contactor, one set of indicating lights and Push Buttons.					
	7 nos. 50kVAR capacitor bank with 125A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 25kVAR capacitor bank with 63A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	1 no. Electronic type Auto matic power factor correction relay.	2	Set			

Sl.no.		Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
8.02	i.	<b>Main LT Distribution Panel (ESS-2) Located Near A&amp;E Basement floor</b>					
		<b>INCOMING:</b>					
		3 nos. 3200A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with Overvoltage and undervoltage protection.					
		3 nos. 0-500V Digital type Voltmeter with selector switch.					
		3 nos. 0-3200A Digital type Ammeter with selector switch 3ith CT's 3200/5A					
		3 nos. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
		3 sets of phase indicating lamps with MCB protection.					
		3 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
		3 nos. Restricted earth fault relays.					
		3 nos. Tripping or Trip Free relays.					
		3 nos Trip Circuit Supervision relays.					
		<b>BUSBARS:</b>					
		3 Set of TPN aluminium bus bar of minimum of 4000 Amps capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc for withstanding fault level of 31 MVA for 1 Sec.					
		<b>BUS COUPLER :</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	2 no. 3200A 660V, 4P 50kA MDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection ON /OFF/TRIP Indications with MCB.					
	<b>OUTGOING:</b>					
	3 nos. 1600A 660V, TP MDO ACB of 50kA ON/OFF/TRIP indication lamp with MCB					
	4 nos. 1600A 660V, TP EDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 1250A 660V, TP MDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	3 nos. 1000A 660V, TP MDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 nos. 800A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	6 nos. 400A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	7s nos. 200A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	1	Set			
	ii. <b>Capacitor Panel - 1, 2 &amp; 3</b>					
	<b>INCOMER :</b>					
	1 No 1600A 660 Volts, TP MDO ACB					
	1 no. 0-1600A Digital type Ammeter with selector switch with CT's 1600/5A					
	1 Set of phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	2000A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 100kVAR capacitor bank with 250A TP MCCB and Contactor, one set of indicating lights and Push Buttons.					
	7 nos. 50kVAR capacitor bank with 125A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 25kVAR capacitor bank with 63A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					

Sl.no.		Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
		1 no. Electronic type Auto matic power factor correction relay.	3	Set			
8.03	i.	<b>Main LT Distribution Panel (ESS-3) Near O.P.D. /Oncology Block</b>					
		<b>INCOMING:</b>					
		2 nos. 3200A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with Overvoltage and undervoltage protection.					
		2 nos. 0-500V Digital type Voltmeter with selector switch.					
		2 nos. 0-3200A Digital type Ammeter with selector switch with CT's 3200/5A					
		2 nos. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
		2 sets of phase indicating lamps with MCB protection.					
		2 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
		2 nos. Restricted earth fault relays.					
		2 nos. Tripping or Trip Free relays.					
		2 nos Trip Circuit Supervision relays.					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	<b>BUSBARS:</b>					
	2 Set of TPN aluminium bus bar of minimum of 4000 Amps capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc for withstanding fault level of 31 MVA for 1 Sec.					
	<b>BUS COUPLER :</b>					
	1 no. 3200A 660V, 4P 50kA MDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection ON /OFF/TRIP Indications with MCB.					
	<b>OUTGOING:</b>					
	2 nos. 1600A 660V, TP MDO ACB of 50kA ON/OFF/TRIP indication lamp with MCB					
	2 nos. 1250A 660V, TP EDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 1000A 660V, TP MDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	2 nos. 800A 660V, TP EDO ACB OF 50kA with inbuilt protections and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	5 nos. 630A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	3 nos. 400A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	3 no. 250A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 200A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 100A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
ii.	<b>Capacitor Panel - 1 &amp; 2</b>					
	<b>INCOMER :</b>					
	1 No 1600A 660 Volts, TP MDO ACB					
	1 no. 0-1600A Digital type Ammeter with selector switch with CT's 1600/5A					
	1 Set of phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	2000A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	4 nos. 100kVAR capacitor bank with 250A TP MCCB and Contactor, one set of indicating lights and Push Buttons.					
	7 nos. 50kVAR capacitor bank with 125A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 25kVAR capacitor bank with 63A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	1 no. Electronic type Auto matic power factor correction relay.	2	Set			
8.04	Supplying, Design , Installation, testing and commissioning of SCADA System for the Power system from 33 KV and 11 KV incoming supply, DG Supply and LT Panels supply of all the 4 substations complete as per requirement and specification hardware, software and control and data cabling as required.	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
8.05	Suplying, delivery, errection testing and commissioning of the following for metering and protection.					
a.	Lead acid 24 V storage battery of suitable ampere hour capacity suitable for 33 kV Panels in HT panel room.					
b.	Float Trick charger suitable for above items for 30 volts DC.					
c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 1.5 sq.mm copper cable .					
e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	3	Set			
	<b>TOTAL OF MAIN LT PANELS, FEEDER PILLARS, MAIN DISTRIBUTION BOARDS</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>9</b>	<b>EXTERNAL LIGHTING</b>					
9.01	<b>8 mtrs GI High pole</b>					
	i. Supply, fixing and commissioing of octagonal poles of 8 mtrs high bottom diameter 145mm and top diameter 80mm, 3mm thich Hot Dip Galvanized to give average 65 micron thickness with single arm bracket 1000mm long complete with civil work and specification as required.	54	Each			
	ii. Supply, fixing and commissioing of octagonal poles of 8 mtrs high bottom diameter 145mm and top diameter 80mm, 3mm thich Hot Dip Galvanized to give average 65 micron thickness with double arm bracket 1000mm long complete with civil work and specification as required.	33	Each			
9.02	Supply, fixing and commissioing of 16 mtr high High Mast e Hot Dip Galvanized to give average 65 micron thickness complete as per specification.	2	Each			
9.03	Supply, fixing and commissioing of 50mm dia 4 mtrs. High Class - B GI pole octagonal poles complete as required.	46	Each			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
9.04	Supply, fixing, testing and commissioing of 1 x 150 watt SON-T 150Watt (HPSV) street light luminaire with high pressure die cast aluminium housing POT optics reflector and toughned flat glass offering (IP-65) ingress protection suitable for use with high pressure Metal Halide lamp, pole mounting type light with lamp fixture, heat resistance & touchhened glass cover,Precision optics reflector etc.complete with all accessories complete as required Philips make- (Cat No.SGP 401-1 x SON-T 150 Watt)	120	Each			
9.05	Supply, fixing, testing and commissioing of 2 x 250 watt HPSV GLANZ IP 66 Pole mounting type Flood light fixture with lamp fixture, heat resistance & touchhene glass cover, anodized high purity aluminium reflector, Die -cast aluminum Cap (LM6) CRCA connector bracket & lamp holder pre-wired up to terminal block etc.complete with all accessories as required complete similar to Philips make or Model No.(GF254 + GBC1250SV(x2)	12				
9.06	Supply, fixing, testing and commissioing of 2 x 18 watt CFL light fixture dust and jet proof (IP-66) luminaire high grade polycarbonate housing & cover ensure imact resistance with 2 nos. 18 watt CFL lamps complete as required.Philips make Cat No TCW097/218-2 x TLD18 watt.	46				

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
9.07	Supply, fixing, testing and commissioning of 1 x 70 watt Post Top Lantern with conical cover similar to(Philips make Cat No SPC 101/70(1) HPF-1 x SON70 Watt).	10	Each			
9.08	Supplying, installation, testing and commissioning of M.V. cubical type totally enclosed dust, dump and vermin proof EX. Light Feeder Pillar for outdoor duty-1 complete with canopy and lockable doors bus bars, MV danger notice plate, Digital type Multifunction meter, Ammeter, Ammeter selector switch, voltmeter, Voltmeter selector switch, indicating lamps, CT's, Interconnection with suitable capacity aluminium strips / rods, connection of incoming and outgoing cables with thimbles, powder coating and having following incoming and outgoing switch fuse/ fuse and MCBs MCCBs complete as required.					
	<b>i EX. Light Feeder Pillar for outdoor duty-1</b>					
	<b>INCOMER :</b>					
	1 no. 200A 660 Volts, TP MCCB 25kA with Thermal magnetic trip unit and ON, OFF, TRIP Indicating lamps.					
	1 no. 110A 4P Contactor with timer					
	1 Set of phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300 A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	25 nos. 20A DP MCB of 10kA.					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
	10 nos. 25A TPN MCB of 10kA.	2	Set			
	<b>ii. EX. Light Feeder Pillar for outdoor duty</b>					
	<b>INCOMER :</b>					
	1 no. 125A 660 Volts, TP MCCB 25kA with Thermal magnetic trip unit and ON, OFF, TRIP Indicating lamps.					
	1 no. 110A 4P Contactor with timer					
	1 Set of phase indicating lamp with MCB					
	<b>BUS BARS:</b>					
	300 A TPN bus bars of aluminium alloy.					
	<b>OUT GOING:</b>					
	20 nos. 20A DP MCB of 10kA.					
	5 nos. 25A TPN MCB of 10kA.	1	Set			
9.09	Supply of the following size XLPE insulated power cable of 1.1 KV grade aluminium conductor armoured cables as per IS:7098(part-1)					
	i. 3 1/2 x 70 sq.mm	450	Metre			
	ii. 3 1/2 x 50 sq.mm	400	Metre			
	iii. 4 x 25 sq.mm	1500	Metre			
	iv. 4 x 16 sq.mm	2000	Metre			
	v. 2 x 16 sq.mm	8000	Metre			
	vi. 2 x 6 sq.mm Copper Cable	1000	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
9.10	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes in Ground as required.					
	i upto 25 sq.mm	5500	Metre			
	ii. from 25 upto 120 sq.mm	350	Metre			
9.11	Laying of one number additional XLPE power cable of 1.1 KV grade of following sizes direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
	i upto 25 sq.mm	4000	Metre			
	ii. from 25 upto 120 sq.mm	300	Metre			
9.12	Laying of one number XLPE power cable of 1.1 KV grade of following sizes in the existing RCC/HUME/STONEWARE/METAL pipe as required.					
	i upto 25 sq.mm	1000	Metre			
	ii. from 25 upto 400 sq.mm	100	Metre			
9.13	Laying of one number XLPE power cable of 1.1 KV grade of following sizes in the existing masonry open duct as required.					
	i upto 25 sq.mm	2000	Metre			
	ii. from 25 upto 120 sq.mm	100	Metre			



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
9.14	Supplying and making outdoor end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					
	i. 3 1/2 x 70 sq.mm	4	Set			
	ii. 3 1/2 x 50 sq.mm	4	Set			
	iii. 4 x 25 sq.mm	20	Set			
	iv. 4 x 16 sq.mm	150	Set			
	v. 2 x 16 sq.mm	70	Set			
	vi. 2 x 6 sq.mm Copper Cable	100	Set			
9.15	Supplying and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface/recessed steel conduit as required.					
	3 x 1.5 sq.mm	1400	M			
9.16	Earthing with G.I. Earth pipe 4.5 mtr. Long x 40mm dia. including accessories & providing masonry enclosure with cover plate having locking arrangement and watering pipe etc( but without or coke and salt). complete as required.	15	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
9.17	Extra using charcoal and salt for Pipe earth electrode as required.	15	Set			
9.18	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing alongwith the existing surface / recessed conduit/ submain wiring / cable as required.	4000	M			
	<b>TOTAL OF EXTERNAL LIGHTING</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>10.00</b>	<b>CCTV SYSTEM</b>					
10.01	Supply, Installation, Testing and commissioning of 1/4" CCD Outdoor High Speed Dome, Optical 30x, Digital 8x, 520 TVL, AC24V, PAL, weather proof outdoor housing, IP66 complete with power supply and	3	Each			
10.02	Supply, Installation, Testing and Commissioning of PC OS with 32" monitor, online UPS of 1 KVA with 1/2 hour battery back-up and IP media converter(RJ 45 to optical) as per the tender specifications as per specification and requirement.	1	Each			
10.03	Supply and laying of armoured RG 59 tinned copper co-axial cable with polythene insulation. RG 6 only in case of distance between camera and DVR is more than 250mts as per specification and requirement.	500	Metre			
10.04	Network Switch with required accessories connecting all DVR's to central Monitoring station	1	Lot			
10.05	Supply and laying of 3 core 1 sqmm. armoured power cable as per specification and requirement.	200	Metre			
10.06	Supply and laying of 4 core 1 sqmm armoured cable for PTZ cameras as per specification and requirement.	500	Metre			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
10.07	Supply and laying of optical fibre for connecting all DVR's to central monitoring station as per specification and requirement.	500	Metre			
10.08	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
i.	20mm	300	Metre			
ii.	25mm	100	Metre			
iii.	32mm	50	Metre			
	<b>TOTAL OF CCTV SYSTEM</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>11</b>	<b>FIRE ALARM AND DETECTION SYSTEM</b>					
11.01	Supply, fixing, testing and commissioing of Bacnet Gateway for BMS Integration	1	LS			
11.02	Supply, fixing, testing and commissioing of Network Repeater Panel with 6inch/640 characters The LCD shall Display all events / detectors, devices status of complete systems in the networked. (FOR DISASTER CONTROL ROOM)	1	Nos.			
11.03	Supply, fixing, testing and commissioing of High Speed Network Cards for Single Mode Fibre with Two network ports in each device to allow simultaneous connection to fire alarm control panel and to programming computer.It shall have minimum network speed of 100 MB baud transmission rate	9	Nos.			
11.04	The GUI based Network Control Station with UL Listed software capable of graphically representing each facility being monitored with floor plans and icons depicting the actual locations of the various systems; and / or sensors' locations. The NCS shall have a desktop with following specifications (for disaster control room)					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
i	Intel Pentium Core II Duo (tm)-processor, operating at a minimum of 1GB of RAM,, 80 Gbyte hard disk, mouse, 32X CD-ROM, 3PCI / 1 ISA expansion slots, sound card, 200 watt power supply, and SVGA graphics with a screen resolution of 1024 x 768 including des					
(a)	Desktop Colour printer	1	Set			
11.05	Providing & laying the following armoured fiber cable for networking of all fire panels to graphical software: 62.5/125 micrometers (multi-mode); 50/125 micrometers (multimode), or 9/125 micrometers (singlemode). Maximum attenuation is 10 dB with 62.5/125	1200	Rmt			
11.06	Supply and drawing of 2 C X 1.5 Sq mm FRLS PVC insulated TWISTED copper wire in MS Conduit complte as per requirement.	300	Rmt.			
	<b>TOTAL OF FIRE ALARM AND DETECTION SYSTEM</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>12</b>	<b>LAN SYSTEM</b>					
12.01	Supply, fixing, testing and commissioing of DL380G5 / (1) Quad-Core Intel Xeon Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB) / 12MB (2 x 6MB) Level 2 cache / 2 GB (2 x 1 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online					
	i. 4 GB FBD PC2-5300 2X2GB Kit for					
	ii. HP 146GB 3G SAS 10K SFF SP HDD					
	iii. Slimline CD-RW/DVD-ROM Combo Option Kit					
	iv. Hotplug Redundant Power Supply 350/370/380 G5 / 385G2	2	Each			
12.02	Supply, fixing, testing and commissioing of Cat6 UTP cable 4 Pair complete as per specification and requirement.	108920	Rmt			
12.03	Supply, fixing, testing and commissioing of Cat6 Jack Panel 24-port cat 6 loaded Modular Jack panel with toolless jack 1U as per specification and requirement.	161	Each			
12.04	Supply, fixing, testing and commissioing of Cat6 Patch Cord 1m complete as per specification and requirement.	2723	Each			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
12.05	Supply, fixing, testing and commissioing of Core Chassis Switch complete as per specification and requirement.	1	Each			
12.06	Supply, fixing, testing and commissioing of SC-Style Connectors type pigtails, Multimode, Simplex complete as per specification and requirement.	825	Each			
12.07	Supply, fixing, testing and commissioing of Network Rack 800 mm x 800 mm 42 U Free standing cabinet with front locable door, side panels,2 set of castor wheel, 230 V AC 90 CFM fan 4, three Hardware packet 1 set (containing 20 Nos each of 3), heavy duty st	1	Each			
	<b>TOTAL OF LAN SYSTEM</b>					



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>13</b>	<b>E.P.A.B.X SYSTEM</b>					
13.01	Supply, fixing, testing and commissioing of IP Ready communication Server - as per technical specifications					
	ISDN PRI Trunk interface (30 Channel) - 6 Nos.					
	16 Trunk P&T					
	1700 Analog Extensions interface expandable to 2000 extension.					
	32 Digital Extensions interface					
	8 Port BRI Interface - 1 No.					
	06 Port Voice Mail System - 1 No.					
	30 part conference bridge					
	Remote Maintenance					
	System Documentation on CD-ROM					
	PC based operator console - 5 Nos.	1	Set			
13.02	Supply, fixing, tsting and commissioing of Battery Charger for above FCBC Battery Charger - 150 Amp as per specification and requirement.	1	No.			
13.03	Supply, fixing, testing and commissioing of Batteries for Above Battery Backup for 4 Hours - 320 Ah as per specification and requirement.	1	No.			
13.04	Main Distribution Frame (MDF)					
	Supply, fixing, tsting and commissioing of Main Distribution Frame kronr type - 3000 pair .	2	No.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
13.05	Supply, fixing, testing and commissioing of 100 Pair Armoured Jelly Filled Cable in existing hume pipe or duct or HDP pipe.	3000	Rmt			
13.06	Supply, fixing, testing and commissioing of 300 Pair Armoured Jelly Filled Cable in existing hume pipe or duct or HDP pipe.	2000	Rmt			
13.07	Supply, fixing, tsting and commissioing of Call Detail Reports Call Billing Software - without PC as per specification and requirement.	1	No.			
13.08	Supply, fixing, tsting and commissioing of PC as as per specification and requirement.specified for :					
	a. Operator Console	5	No.			
	b. Maintenance Console	1	No.			
	c. Call Billing Console	1	No.			
13.09	Supply, fixing, tsting and commissioing of Printer HP make Colour Inkjet Printer (HP Deskjet 5160 or above) as per specification and requirement.	1	No.			
13.10	Supply, fixing, tsting and commissioing of HDPE pipe, 40mm.	1750	Metre			
13.11	Supply, fixing, tsting and commissioing of Couplers for HDPE DWC Pipe, 40mm.	87	Nos.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
13.12	Supply, fixing, teting and commissioing of HDPE DWC duct, 120mm.	500	Metre			
13.13	Supply, fixing, teting and commissioing of Couplers for HDPE DWC duct, 120mm.	50	Nos.			
13.14	Supply, fixing, teting and commissioing of ISDN EPABX system for Housing - TEC/DOT approved equipped as below and expandable upto 800 ports as per specification and requirement.:					
	Duplication of CPU, Controller card Power Supply					
	DC Power supply operated					
	ADSL, HDSL, VDSL & wifi ready					
	ISDN PRI lines (30 Ch.)					
	Digital Phones - 24 Nos.					
	Analog Phones - 600 Nos.					
	4 Ports Voice Mail System					
	FCBC with duplication with battery bank for 4 hrs back up	1	Set			
	<b>TPTAL OF E.P.A.B.X SYSTEM</b>					

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>14</b>	<b>INTEGRATED BUILDING MANGEMENT SYSTEM (IBMS)</b>					
	Supply,Installation,testing and commissioning of BMS and allied system as detailed below and as per specifications:					
<b>14.01</b>	<b>Central Works Station :</b>					
i.	Supply, fixing, testing and commissioing of Intel Core 2 Duo, machine with 2.4 GHz speed, 2 GB RAM, 160 GB HDD, DVD -RW keyboard, 8 serial port, 2 parallel ports, Window XP Pro, Multimedia extenal modem as per specifications.					
ii.	Supply, fixing, testing and commissioing of Colour Monitor LCD - 26 inches.					
iii.	Supply, fixing, testing and commissioing of A4 Laser jet Printer.					
iv.	Supply, fixing, testing and commissioing of Mouse.					
v.	Supply, fixing, testing and commissioing of UPS with 20 minutes battery backup.	1	Job			
<b>14.02</b>	<b>Software and System Interface Units :</b>					
i.	Supply,Installation,testing and commissioning of the following software for BAS as per specifications Developing,testing and commissioning of the software for the building automation system along with necessary license..	1	No			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>14.03</b>	Providing all necessary software and hardware for the interface of the following system/equipment including providing necessary integrators/modules (RS-232/modbus/ Bacnet output to be provided by other vendors)					
i.	Chiller Machines - 6 Nos.	1	Set			
ii.	Energy Meters - 200 nos	1	Set			
iii.	Fire Alarm System	1	Set			
iv.	Solar System - 6 nos	1	Set			
v.	DG Set - 5 no	1	Set			
vi.	UPS - 2 nos	1	Set			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
14.04	<b>Supply,Installation,testing and commissioning of following controllers as per the specifications:</b>					
i.	Supply, fixing, testing and commissioing of Standalone intelligent LonWorks based, UL Listed Controllers with 32 bit microprocessor, real time clock and EEPROM as per the specifications. The controller shall be housed in a vandal proof, lockable and secur					
a	For Plant Room.	1	Set			
b	For AHUs (max 2 nos AHUs/DDC Controller)	90	Nos			
c	For Air Washers (Max 2 nos. Airwashers/DDC Controller)	11	Nos			
d	For Ventilation Fans (Max 2 nos Fans / DDC	25	Nos			
e	For Water Supply System	1	Set			
f	For Fire Protection System	1	Set			
g	For DG Sets	1	Set			
h	For Transformers	1	Set			
i	For Electrical system	1	Set			
j	For Lifts (Max 2 nos Lifts/ DDC Controller)	25	Nos			
ii.	System Interface modules consisting of gateways, other interface units as required as per specifications. The units shall be housed in vandal proof lockable and secure wall mounted MS cabinets to be supplied alongwith the controllers.	1	Job			
iii.	Hand Held Portable Operator Terminals	1	No.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>14.05</b>	<b>Sensors and Field Devices</b>					
	Supply,Installation,testing and commissioning of the following sensors/transmitters/transducers/ field devices as per the specifications					
i.	Immersion type temperaure sensors for measuring chilled water & condenser water supply and return temperature	12	Nos.			
ii.	Supply, fixing, testing and commissioing of Duct type temprature sensor for measuring return air at the Air Handling units	180	Nos.			
iii.	Supply, fixing, testing and commissioing of Pressure transmitter for measuring pressure in water lines	1	Nos.			
iv.	Supply, fixing, testing and commissioing of Differential Pressure switch across the Air Handling Units filters for indicating the filter status	180	Nos.			
v.	Supply, fixing, testing and commissioing of Differential Pressure switch across the Fan sections for indicating the fan status	180	Nos.			
vi.	Supply, fixing, testing and commissioing of Level switches for indicating water levels in cooling towers, sumps and tanks.	50	Nos.			

Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
vii.	Supply, fixing, testing and commissioning of Differential Pressure switch across Air Washers sections for indicating the air washer run status	22	Nos.			
viii.	Supply, fixing, testing and commissioning of Current Relays	150	Nos.			
ix.	Supply, fixing, testing and commissioning of AC Voltage Transducers	1	Nos.			
x.	Supply, fixing, testing and commissioning of DC Voltage Transducers	5	Nos.			
<b>14.06</b>	<b>Cable &amp; Conduits</b>					
	Supply, Installation, testing and commissioning of the following cables as per specifications :					
i.	Signal cable (2 x 1.5 Sq. MM., stranded tinned Cu conductor, flexible, PVC sheathed type)	30000	RM			
ii.	Communication cable (2 x 1.5 Sq. MM., stranded tinned Cu conductor, flexible, PVC sheathed, Shielded)	14000	RM			



Sl.no.	Description Of Item	Total Qty	Unit	Rate in Fig Rs	Rate in Words	Amount in Fig Rs
<b>14.07</b>	<b>Conduits :</b>					
	Supply,Installation,testing and commissioning of the following conduits for running cables as per specifications :					
i.	M.S. Conduit for signal cable (25 mm)	18000	RM			
ii.	M.S. Conduit for communication cable (20 mm)	14000	RM			
	<b>TOTAL OF INTEGRATED BUILDING MANGEMENT SYSTEM (IBMS)</b>					

**BILL OF QUANTITIES**

**FOR**

**HVAC WORKS**

**AT**

**LADY HARDINGE MEDICAL COLLEGE  
NEW DELHI**

**( HOSPITAL AND ONCOLOGY BLOCK)**

<b>Bill of Quantities - Hospital and Oncology at Lady Hardinge, New</b>						
The prices are to be quoted in the below mentioned form and shall include the supply and installation at site of all the equipments, ancillary materials as specified and all such items whatsoever which may be required to fulfil the intent and purpose as laid down in the specification and/or the drawings.						
<b>Note:</b>	<b>a) All Equipment should be BMS Compatible with BACnet / MODbus application</b>					
	<b>b) All equipments RCC/ Cement concrete foundation to be included in the quote</b>					
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty.</b>	<b>Rate (Rs.)</b>	<b>Rate in words (Rs.)</b>	<b>Amount(Rs.)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b><u>Part-A : Machinery</u></b>						
<b>1</b>	<b><u>Water Chilling Unit</u></b>					
1.1	Supply, Installation, Testing and Commissioning of water cooled centrifugal type Water chiller machines each having a capacity of 425 TR at chilled water inlet/outlet temperature of 12.22°C /6.6°C with chilled water circulation rate of 3876 LPM (nominal) and condenser water inlet/outlet temprature of 32.2°C /37.8°C with circulation rate of 4827 LPM(Nominal), suitable for operation on refrigerant R134a each comprising of the following complete as per specification and as required					
a)	1 No.- centrifugal type compressor semi hermatic / open type, automatic capacity control, safety switches, speed, increasing gears, forced feed lubrication system etc. as per specifications.					
b)	1 No.- Suitable capacity squirrel cage induction motor with class 'F' insulation suitable for operation on 400±10% volts, 50 Hz A.C. supply.					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
c)	1 No. Variable speed / frequency starter suitable for compressor motor complete with active armonic filters complying to IEEE519 for hospitals, ammeter with CT's over load protection, under voltage protection against phase reversal and independent single phase preventors etc. complete as required.					
d)	Necessary drive arrangement.					
e)	1 Set- Lubrication Device consisting of automatic electric oil pump, oil cooler, head tank, oil strainer, automatic pressure regulating valve, oil heater, oil heater thermal switch etc. as per spesifications.					
f)	1 No.- Matching shell and tube water cooled condenser  of M.S. shell and integrally finned copper tubes.					
g)	1 No.- Matching shell and tube flooded type chiller of M.S. shell and integrally finned copper tubes.					
h)	1 Lot- refrigerant piping fittings, valve and accessories to inter connect compressor, condenser, chiller and expansion valve.					
i)	1 Set- Advanced Microprocessor based control pannel (coloured & graphical display) complete with accessories as per specifications.					
j)	Lot- Refrigerant line accessories comprising of safety valves, angle valve, liquid line indications, liquid levelcontrol etc.					
k)	Lot- water flow switches at inlet and outlet of condenser & chiller, water drain and air purge valves wherever required.					
l)	Lot- Suction line and chiller insulation with minimum 19 mm thick polyvinyl nitrile rubber insulation finished with 0.63 mm thick G.S.S. cladding complete as required.					
m)	Lot- Frame work for mounting the above condenser, chiller, compressor and motor with base plate complete with antivibration pads/ springs.					
n)	Lot- Initial/First charge of refrigerant gas and compressor oil.					
o)	Lot- RCC/Cement concrete foundation for the chilling unit.					
p)	Max 1kW/TR - 0.66					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
q)	C.O.P at ARI conditions > 6.3					
1.1.1	Cooling Capacity :425TR					
1.1.2	Water in condenser in/out : 32.2 °C / 37.8 °C					
1.1.3	Chilled water 'In' : 12.22 °C					
1.1.4	Chilled water 'Out' : 6.7 °C					
1.1.5	Chiller Fouling Factor : 0.0005					
1.1.6	Condenser Fouling Factor : 0.001					
1.1.7	Max IKW/TR: 0.66					
1.1.8	Configuration :- 4 Working & 1 Stand by	Nos.	5			
1.2	<b><u>Plant Room Manager</u></b>					
1.2.1	Plant room manager - Plant Room Manager for sequencing, remote monitoring, controlling and report generation of above equipments ( 5 # chillers, 5 # primary chilled water pumps, 5 # condenser water pumps & 4 CT ). Selected controller shall have capability to meet Detailed IO summary mentioned under specifications. Supervisory Controller for management level interface in MS Enclosure SWG thickness, powder coated SIEMENS grey for SUPERVISORY CONTROLLER, IO CARDS (with accessories like Transformer, MCB, internal wiring and Relays with bases). Workstation PC Pentium IV computer 3000 Mhz with 80 GB hard disk,17" TFT monitor, 104 windows key board, mouse,serial and parallel ports WITH 600 DPI colour ink jet printer. This must have software integration on Chillers with 3rd party interface available on Bacnet. Cabling & Conduit work will be quoted in separate at head	Lot	1			
1.3	<b><u>Third Party Inspection Charges</u></b>					
	Factory testing charges for 425 TR one No.Water Cooled centrifugal chiller at 100%,75%,50% and 25% load point at works. Charges should include four persons visit ( local traveling/ lodging & boarding)	Lot	1			
2	<b><u>Pumps</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
2.1	<b>Primary Chilled Water Pumps</b>					
	Supply, Installation, Testing and Commissioning of Endsuction chilled water circulating pump set capable of delivering 3876 LPM of water against a head of 12 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. end suction type pump					
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415 ±10% volt, 3 phase, 50 htz A.C supply					
c)	Lot - Expanded polystyrene (T.F quality) insulation of not less than 50 mm thick duly claded between aluminum sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.					
d)	2 Nos. 150 mm dia. Dail type pressure gauges.					
e)	Lot- Mounting frame work with anti vibration pads.					
f)	Lot- RCC/Cement concrete foundation for the pump unit.					
	Note: One set of pump shall be used as stand by.	Nos.	5			
2.2	<b>Secondary Chilled water pumps</b>					
	Supply, Installation, Testing and Commissioning of Split casing chilled water circulating pump set capable of delivering 7500, 9120 and 2892 LPM of water against a head of 20 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. Split casing type pump					
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415 ± 10% volt, 3 phase, 50 htz A.C supply					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
c)	Lot - Expanded polystrene (T.F quality) insulation of not less than 50 mm thick duly claded between aluminum sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.					
d)	2 Nos. 150 mm dia. Dail type pressure gauges.					
e)	Lot- Mounting frame work with anti vibration pads.					
f)	Lot- RCC/Cement concrete foundation for the pump unit.					
2.2.1	<b><u>For 12 Hour Zone</u></b>					
	Chilled water 7500 LPM (37.5 KW) at 20 M head (1 standby)	Nos.	2			
	Control panel with VFDs, 1 DPTs and PLC with duly downloaded software for Secondary chilled water pumps	Set	1			
2.2.2	<b><u>For 24 Hour Zone</u></b>					
	Chilled water 9120 LPM (45 KW) at 20 M head (1 standby)	Nos.	2			
	Control panel with VFDs, 1 DPTs and PLC with duly downloaded software for Secondary chilled water pumps	Set	1			
2.2.3	<b><u>For Oncology</u></b>					
	Chilled water 2892 LPM (15 KW) at 20 M head (1 standby)	Nos.	2			
	Control panel with VFDs, 1 DPTs and PLC with duly downloaded software for Secondary chilled water pumps	Set	1			
2.3	<b><u>Condenser Water Pumps</u></b>					
	Supply, Installation, Testing and Commissioning of split casing condenser water circulating pump set capable of delivering 1275 GPM of water against a head of 25 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. Split casing type pump					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415±10% volts, 3 phase, 50 hz A.C supply					
c)	2 Nos. 150 mm dia. Dial type pressure gauges.					
d)	Lot- Mounting frame work with anti vibration pads.					
e)	Lot- RCC/Cement concrete foundation for the pump Note: One set of pump shall be used as stand by.	Nos.	5			
2.4	<b>Hot water pumps</b>					
	Supply, Installation, Testing and Commissioning of Split casing hot water circulating pump set capable of delivering chilled water against a head of 20 meters. Each pump shall comprise of following as required as per specifications					
	1 No. Monobloc type pump					
	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415 ± 10% volt, 3 phase, 50 hz A.C supply					
	Lot - Expanded polystyrene (T.F quality) insulation of not less than 50 mm thick duly claded between aluminum sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.					
	2 Nos. 150 mm dia. Dial type pressure gauges.					
	Lot- Mounting frame work with anti vibration pads.					
	Lot- RCC/Cement concrete foundation for the pump unit.					
	Hot water 912 LPM (2.2 KW) at 20 M head (1 standby)	Nos.	2			
3	<b>FRP Cooling Tower</b>					



Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supply, installation, testing and commissioning of FRP cooling tower of 1663200 Kcal/hr heat rejection capacity with FRP water basin, PVC fillings with integral louvers and drift eliminators complete with hot water basin either fitted with spray nozzles or having self rotating sprinklers, statically and dynamically balanced axial flow fan direct driven or driven through speed reduction gear box with TEFC induction motor, suction screen, make up- quick fill arrangement, over flow and drain pipe connections with valves and suitable inspection ladder, access arrangement for cooling tower interior, cement concrete foundation, steel/masonry supporting structure, anti vibration mountings etc. as per specifications and as required.					
3.1	550 TR capacity @ 28.4 Deg.C Wb (Ambient)					
3.2	Flow Rate : 1275 GPM Minimum					
3.3	Motor (10 KW x 2 Fan)					
3.4	Cooling Tower 'IN' Temp. : 37.8°C					
3.5	Cooling Tower 'OUT' Temp.: 32.2°C	Nos.	4			
4	<b><u>Horizontal Type Air Handling Units</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
4.1	Supply, Installation, Testing and Commissioning of factory built, floor mounted horizontal type, chilled water Double skin type AHU made of 25 mm thick panels consisting of G.I casing of thickness 0.8 outside and 0.8 inside layer with factory injected PUF injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as detailed below, minimum 2 bend GSS/ PVC eliminators, cooling coil section with aluminum finned copper tubes( tube thickness not less than 0.5mm), filter section with 50 mm thick metal viscous/ washable synthetic type air pre filters, belt drive package with TEFC drive motor suitable for 415 ±10% volts, 50Hz 3 phase, A.C supply, drain connection, stainless steel drain pan thermometers and pressure gauges at inlet and outlet of the coil, necessary vibration isolation arrangement etc complete as per specifications and drawings of as follows :					
4.1.1	2500 cfm with 4 Rows Coil Cooling 5 Sqft. Coil Area, 2.2 KW motor, 40 mm static pressure.	Nos.	2			
4.1.2	3200 cfm with 4 Rows Coil Cooling 6.4 Sqft. Coil Area, 3.7 KW motor, 40 mm static pressure.	Nos.	2			
4.1.3	3500 cfm with 4 Rows Coil Cooling 7 Sqft. Coil Area, 3.7 KW motor, 40 mm static pressure.	No.	1			
4.1.4	5000 cfm with 4 Rows Coil Cooling 10 Sqft. Coil Area, 3.7 KW motor, 40 mm static pressure.	Nos.	2			
4.1.5	10000 cfm with 4 Rows Coil Cooling 20 Sqft. Coil Area, 5.5 KW motor, 40 mm static pressure. (Sectional type AHU).	No.	1			
4.1.6	12000 cfm with 4 Rows Coil Cooling 24 Sqft. Coil Area, 7.5 KW motor, 40 mm static pressure. (Sectional type AHU).	No.	1			
4.1.7	14000 cfm with 4 Rows Coil Cooling 28 Sqft. Coil Area, 7.5 KW motor, 40 mm static pressure. (Sectional type AHU).	Nos.	2			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
4.1.8	15000 cfm with 4 Rows Coil Cooling 30 Sqft. Coil Area, 7.5 KW motor, 40 mm static pressure. (Sectional type AHU).	No.	1			
4.1.9	16000 cfm with 4 Rows Coil Cooling 32 Sqft. Coil Area, 7.5 KW motor, 40 mm static pressure. (Sectional type AHU).	Nos.	5			
4.2	<b><u>Air Handling Units For Operation Theater.</u></b>					
	Providing and fixing floor mounted type double skin unitary Air Handling Units complete 6 row cooling coil with 50 mm thick PUF injected panel imported centrifugal fan at 125 MMwg static, fan motor TEFC type, drive set, coil section with cooling coils, flat filter section with Pre-filters, HEPA filters 150 mm thick with 99.97% efficiency down to 0.3 micron particle size, inclined manometer across HEPA filters, belt gurd, fire resisting flexible canvass connection etc. complete as per specifications.					
4.2.1	1500 CFM capacity with 3 Sq.ft., 6 row deep cooling coil & 2 row heating coil , 1.1 KW motor.	Nos.	3			
4.2.2	1800 CFM capacity with 3. 6 Sq.ft., 6 row deep cooling coil & 2 row heating coil , 2.2 KW motor.	Nos.	4			
4.2.3	2000 CFM capacity with 4 Sq.ft., 6 row deep cooling coil & 2 row heating coil , 2.2 KW motor.	Nos.	17			
4.2.4	2500 CFM capacity with 5 Sq.ft., 6 row deep cooling coil & 2 row heating coil , 2.2 KW motor.	No.	1			
5	<b><u>Unitary Type Air Handling Units</u></b>					
	<b><u>Ceiling suspended</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
5.1	Supply, Installation, Testing and Commissioning of factory built, ceiling suspended type, chilled water Double skin type AHU made of 25 mm thick panels consisting of G.I casing of thickness 0.8 outside and 0.8 inside layer with factory injected PUF injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as detailed below, minimum 2 bend GSS/ PVC eliminators, cooling coil section with aluminum finned copper tubes( tube thickness not less than 0.5mm), filter section with 50 mm thick metal viscous/ washable synthetic type air pre filters, belt drive package with TEFC drive motor suitable for 415 ±10% volts, 50Hz 3 phase, A.C supply, drain connection, stainless steel drain pan thermometers and pressure gauges at inlet and outlet of the coil, necessary vibration isolation arrangement etc complete as per specifications and drawings of as follows :					
5.1.1	1200 cfm with 4 Rows Coil Cooling 2.4 sqft. Coil Area, 1.1 KW motor, 30 mm static pressure.	Nos.	47			
5.1.2	1500 cfm with 4 Rows Coil Cooling 3 sqft. Coil Area, 1.1 KW motor, 30 mm static pressure.	Nos.	11			
5.1.3	1600 cfm with 4 Rows Coil Cooling 3.2 Sqft. Coil Area, 1.1 KW motor, 30 mm static pressure.	Nos.	2			
5.1.4	1800 cfm with 4 Rows Coil Cooling 3.6 sqft. Coil Area, 1.1 KW motor, 30 mm static pressure.	No.	1			
5.1.5	2000 cfm with 4 Rows Coil Cooling 4 sqft. Coil Area, 2.2 KW motor, 30 mm static pressure.	Nos.	15			
5.1.6	2300 cfm with 4 Rows Coil Cooling 4.6 sqft. Coil Area, 1.1 KW motor, 30 mm static pressure.	Nos.	4			
5.1.7	2500 cfm with 4 Rows Coil Cooling 5 sqft. Coil Area, 2.2 KW motor, 30 mm static pressure.	No.	11			
5.1.8	3000 cfm with 4 Rows Coil Cooling 6 Sqft. Coil Area, 2.2 KW motor, 30 mm static pressure.	Nos.	16			
5.1.9	3500 cfm with 4 Rows Coil Cooling 7 Sqft. Coil Area, 2.2 KW motor, 30 mm static pressure.	Nos.	15			
5.1.10	4000 cfm with 4 Rows Coil Cooling 8 Sqft. Coil Area, 3.7 KW motor.	No.	1			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
5.1.11	5000 cfm with 4 Rows Coil Cooling 10 Sqft. Coil Area, 3.7 KW motor, 30 mm static pressure.	Nos.	6			
5.1.12	6000 cfm with 4 Rows Coil Cooling 12 Sqft. Coil Area, 3.7 KW motor, 30 mm static pressure.	No.	1			
5.2	<b><u>Treated Fresh Air Unit</u></b>					
5.2.1	1000 cfm with 8 Rows Coil Cooling 2 sqft. Coil Area, 1.1 KW motor, 50 mm static pressure.	Nos.	44			
6	<b><u>AHU's Controls/Dynamic Balancing Valves</u></b>					
6.1	Supply, Installation, Testing and commissioning of complete controls for AHUs comprising of Electronic, self balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valves in a single body. The actuator shall be capable of accepting 2-10VCD, 4-20mA electric signal and shall provide similar transduced feedback output signal to control system. The minimum close off pressure of actuator must be 1.5 times shut off head of pump as per specifications and drawing of following sizes.					
6.1.1	Water flow rate 6-20 USGPM	Nos.	180			
6.1.2	Water flow rate 21-36 USGPM	Nos.	26			
6.1.3	Water flow rate 60-100 USGPM	Nos.	10			
6.1.4	Modulating Thermostats	Nos.	216			
7	<b><u>Fan Coil Units.</u></b>					
7.1	Supply, Installation, Testing and commissioning of fan coil units having following capacities, ceiling /wall mounted, complete with copper tubes, chilled water Cooling Coils having aluminum fins and auxiliaries including ball valve set, insulation of drain pan, drain connectors, blower, TEFC slow speed (3 speed) squirrel cage induction motor suitable for operation on 230 volts, single phase, 50hz , A.C supply, air pre-filters etc.					
7.1.1	400 CFM (1.0 TR) 3 row cooling coil	Nos.	263			
7.1.2	600 CFM (1.5 TR) 3 row cooling coil	Nos.	206			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
7.1.3	800 CFM (2.0 TR) 3 row cooling coil	Nos.	29			
7.1.4	1000 CFM (2.5 TR) 3 row cooling coil	Nos.	13			
8	<b><u>Fan Coil Unit Controls</u></b>					
8.1	Supply, Installation, Testing and Commissioning of Controls for Fan Coil Units consisting of 2 way motorized valve, room thermostat with ON/Off switch, 3 speed selector switch, electrical wiring etc.					
8.1.1	Water Flow Rate 2.4 USGPM	Nos.	263			
8.1.2	Water Flow Rate 3.6 USGPM	Nos.	206			
8.1.3	Water Flow Rate 4.8 USGPM	Nos.	29			
8.1.4	Water Flow Rate 6.0 USGPM	Nos.	13			
8.1.5	Thermostats with 3 speed fan control	Nos.	511			
9	<b><u>Ventilation Equipment</u></b>					
9.1	<b><u>Package Type Air Washer</u></b>					
	Providing and fixing of package type air washer complete with G.I blower section, DIDW blower, with motors, base, drive arrangement, etc. cooling pad section, stainless steel tank, G.I. housing, filter plenum motor drive, G.I. piping, with valves and fittings etc. as per specifications and drawings including all necessary civil works PVC eliminators as per specifications and drawings.					
9.1.1	23000 CFM @ 40 mm wg, for Waiting	No.	1			
9.1.2	19000 CFM @ 40 mm wg, for Waiting	No.	1			
9.1.3	16500 CFM @ 40 mm wg, for Plant Room	No.	1			
9.1.4	12500 CFM @ 40 mm wg, for waiting	No.	1			
9.1.5	10500 CFM @ 40 mm wg, for waiting	No.	1			
9.1.6	8000 CFM @ 40 mm wg, for waiting	No.	1			
9.1.7	5500 CFM @ 40 mm wg, for waiting	No.	1			
9.1.8	4500 CFM @ 40 mm wg, for waiting	No.	1			
10	<b><u>Axial Flow Fans</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supplying, Installing, Testing and Commissioning of Axial flow fans complete with motor, supporting frame, gravity louvres, weldmesh inlet guard etc. as per drawings and specifications.					
10.1	750 dia, 8,000 CFM @ 15 mm wg,	Nos.	1			
10.2	600 dia, 6,000 CFM @ 15 mm wg, (AC Plant Room)	Nos.	3			
10.3	1200 dia, 53,000 CFM @ 15 mm wg	Nos.	10			
11	<b><u>Inline Fans</u></b>					
	Supplying, Installing, Testing and Commissioning of Inline fans complete with motor, supporting frame, gravity louvres,etc. as per drawings and specifications.					
11.1	250 CFM @ 15 mm wg	Nos.	30			
11.2	500 CFM @ 15 mm wg	Nos.	20			
11.3	750 CFM @ 15 mm wg	Nos.	10			
12	<b><u>Hot Water Generator</u></b>					
	Supply, installation, testing and commissioning of Electric Hot Water Boiler complete with steel shell, heating element, controls, control panels, mounting frame, insulation, cladding etc. all duly painted, 3 nos. banks, water flow switch at Inlet, necessary fittings and accessories as per specifications and drawings.					
a.	Hot water 'In' : 55 °C					
b.	Hot water 'Out' : 65 °C					
12.1	200 KW , 200 US GPM	Nos.	2			
12.2	100 KW , 100 US GPM	No.	1			
13	<b><u>Fan section &amp; Centrifugal Blowers</u></b>					
	<b><u>Fan section</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supplying, Installing, Testing and Commissioning of fan Section with (Backward curved) Centrifugal DIDW Blowers with motors, Base frame, drive arrangement, motor accessories etc. as per specifications and drawings as required.					
13.1	<b><u>For Liftwell Pressurization</u></b>					
13.1.1	6000 CFM @ 50 mm wg	Nos.	2			
13.1.2	8800 CFM @ 50 mm wg	Nos.	2			
13.1.3	12000 CFM @ 50 mm wg	Nos.	2			
13.1.4	14500 CFM @ 50 mm wg	Nos.	2			
13.1.5	18000 CFM @ 50 mm wg	Nos.	4			
13.1.6	21500 CFM @ 50 mm wg	Nos.	1			
13.2	<b><u>For Lift Lobby Pressurization</u></b>					
13.2.1	3200 CFM @ 50 mm wg	Nos.	2			
13.2.2	7200 CFM @ 50 mm wg	Nos.	4			
13.2.3	8000 CFM @ 50 mm wg	Nos.	4			
13.2.4	8800 CFM @ 50 mm wg	Nos.	1			
13.3	<b><u>For Staircase Pressurization</u></b>					
13.3.1	6000 CFM @ 50 mm wg	Nos.	2			
13.3.2	6600 CFM @ 50 mm wg	Nos.	2			
13.3.3	7200 CFM @ 50 mm wg	No.	1			
13.4	<b><u>For Toilet Exhaust</u></b>					
13.4.1	1500 CFM @ 50 mm wg	Nos.	4			
13.4.2	2000 CFM @ 50 mm wg	Nos.	6			
13.4.3	2500 CFM @ 50 mm wg	Nos.	3			
13.4.4	3000 CFM @ 50 mm wg	Nos.	7			
13.4.5	3500 CFM @ 50 mm wg	Nos.	4			
13.4.6	4000 CFM @ 50 mm wg	No.	1			
13.5	<b><u>Centrifugal Blowers</u></b>					
	Supplying, Installing, Testing and Commissioning of (Backward curved) Centrifugal DIDW Blowers with motors, Base frame, drive arrangement, motor accessories etc. as per specifications and drawings as required.					
	<b><u>For Normal Exhaust</u></b>					
13.5.1	25000 CFM @ 35 mm wg	Nos.	15			



Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
14	<b><u>UVGI SYSTEM</u></b>					
	Supply, Installation , testing , commissioning and handing over of the imported Ultra Violet Germicidal Irradiations ( UVGI) System for maintaining indoor Air Quality.The System must be UL listed for fire safety. The components of the system must be in strict conformity with the specifications.and shall be including freight from Delhi Airport to site ,Insurance,Lifting,Shifting etc.as required . The prices to include all inter connected wiring between the UVGI Lamps.					
14.1	<b><u>Hospital Block</u></b>					
	<b><u>Basement</u></b>					
14.1.1	CSSD	SET	1			
	<b><u>Ground Floor</u></b>					
14.1.2	Minor OT 1	SET	1			
14.1.3	Minor OT 2	SET	1			
	<b><u>First Floor</u></b>					
14.1.4	Minor OT	SET	1			
14.1.5	OT 5	SET	1			
14.1.6	OT 4	SET	1			
14.1.7	OT 3	SET	1			
14.1.8	OT 2	SET	1			
14.1.9	Septic OT	SET	1			
	<b><u>Second Floor</u></b>					
14.1.10	Minor OT	SET	1			
14.1.11	Fifth Floor					
14.1.12	Minor OT	SET	1			
	<b><u>Sixth Floor</u></b>					
14.1.13	Minor OT 1	SET	1			
14.1.14	Minor OT 2	SET	1			
14.1.15	Minor OT 3	SET	1			
	<b><u>Seventh Floor</u></b>					
14.1.16	Minor OT	SET	1			
	<b><u>Eighth Floor</u></b>					
14.1.17	OT 3(L)	SET	1			
14.1.18	OT 2(L)	SET	1			



Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.1.12	50 MM	RM	800			
1.1.13	40 MM	RM	400			
1.1.14	32 MM	RM	2400			
1.1.15	25 MM	RM	2000			
1.1.16	20 MM	RM	200			
1.2	Supply, Installation, Testing and Commissioning of following nominal sizes of Chilled water piping <b>Outside the building burried in ground</b> (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges) adequately supported on rigid supports and duly insulated with fire retardant quality expanded polysterene molded pipe sections of density not less than 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500 gm polythene faced hessain and secured with 0.5mmx20mm G.I wire mesh and two coats of cement plaster (each layer not less than 10mm) as per specifications including digging and refilling the trenches and providing suitable thichness 1:2:4 cement concrete pads at 3 m intervals complete as per specifications and as required.					
1.2.1	450 MM	RM	400			
1.2.2	350 MM	RM	250			
1.2.3	300 MM	RM	150			
1.2.4	200 MM	RM	150			
	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specification as the connected piping and adequetly supported as per specifications.					
2	<b>Butterfly Valves</b>					
2.1	300 MM	Nos.	5			
2.2	250 MM	Nos.	1			
2.3	200 MM	Nos.	10			
2.4	150 MM	Nos.	4			
2.5	125 MM	Nos.	2			
2.6	100 MM	Nos.	1			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
2.7	65 MM	Nos.	18			
2.8	50 MM	Nos.	2			
2.9	40 MM	Nos.	52			
3	<b>Ball Valves (With Strainer)</b>					
3.1.1	32 MM	Nos.	36			
3.1.2	25 MM	Nos.	157			
3.1.3	20 MM	Nos.	498			
4	<b>Ball Valves (Without strainer)</b>					
4.1.1	32 MM	Nos.	36			
4.1.2	25 MM	Nos.	157			
4.1.3	20 MM	Nos.	498			
5	<b><u>Motorized Butterfly Valves</u></b>					
5.1	Providing and fixing the following motorized butterfly valves for chilled water pumps and boiler as per specifications					
5.1.1	300 MM	Nos.	5			
5.1.2	200 MM	Nos.	5			
5.1.3	150 MM	Nos.	2			
6	<b><u>Balancing Valves</u></b>					
6.1	300 MM	Nos.	5			
6.2	200 MM	Nos.	10			
6.3	150 MM	Nos.	2			
7	<b><u>Non-Return Valves</u></b>					
7.1	300 MM	Nos.	5			
7.2	200 MM	Nos.	5			
7.3	150 MM	Nos.	2			
8	<b><u>Suction Guide</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Providing and fixing of suction guide of following sizes in the inlet of chilled water pumps as per specifications					
8.1	300 MM	Nos.	5			
8.2	200 MM	Nos.	5			
8.3	150 MM	Nos.	2			
9	<b><u>Y - Strainers</u></b>					
9.1	65 MM	Nos.	9			
9.2	50 MM	Nos.	1			
9.3	40 MM	Nos.	26			
10	<b><u>Pressure Gauges</u></b>					
	Providing and fixing pressure gauge with gauge cock, thermowell. complete as per specifications and drawings.	Nos.	200			
11	<b><u>Thermometers with thermowell</u></b>					
	Providing and fixing thermometer Mercury filled V form type complete as per speci-fications and drawings.	Nos.	160			
12	<b><u>Flow Switches</u></b>					
	Providing and fixing water flow switch on chilled water outlet complete as per specifications and drawings.	Nos.	4			
13	<b><u>Automatic Air Vents</u></b>					
	Providing and fixing auto airvent purging valve complete as per specification and drawings.	Nos.	10			
14	<b><u>Thermowell of 15 mm dia.(Test Point)</u></b>					
	Providing and fixing thermowell on chilled water pipe complete as per specifications and drawings.	Nos.	100			
15	<b><u>Expansion tank</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount (Rs.)
1	2	3	4	5	6	7
	supplying, installation, testing and commissioning of M.S. expansion tank of size 0.6m X 0.6m height made of 3mm thick expanded polysterene (TF quality) insulation covered with vapour barrier, 0.5mm X 20m GI wire mesh netting and finished with 0.5 thick GI cladding duly plastered and complete with vent and draing connections with float valve, quick fill and control valve etc as required.					
15.1	1500 LTRS (Hospital)	No.	1			
15.2	500 LTRS (Oncology)	No.	1			
16	<b><u>Condenser Water Piping</u></b>					
	Supplying, fixing, Testing and Commissioning Condenser water piping of following sizes and materials along with necessary clamps, vibration-isolators, and fittings such as bends, tees etc but excluding strainer and gauges etc adequately supported on rigid supports/burried in ground including excavation & refilling etc as per specification and as required.					
16.1.1	600 MM	RM	200			
16.1.2	500 MM	RM	20			
16.1.3	400 MM	RM	40			
16.1.4	200 MM	RM	150			
16.1.5	150 MM	RM	30			
16.1.6	50 MM	RM	50			
17	<b><u>Butterfly Valves</u></b>					
17.1	600 MM	Nos.	3			
17.2	300 MM	Nos.	15			
17.3	50 MM	Nos.	3			
18	<b><u>Motorized Butterfly Valves</u></b>					
	Providing and fixing the following motorized butterfly valves as per specifications and drawings.					
18.1	300 MM	Nos.	3			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount (Rs.)
1	2	3	4	5	6	7
19	<b>Balancing Valves</b>					
19.1	300 MM	Nos.	12			
20	<b>Float Valves</b>					
20.1	300 MM	Nos.	3			
21	<b>Non-Return Valves</b>					
21.1	300 MM	Nos.	5			
22	<b>Suction Guide</b> Providing and fixing of suction guide of following sizes in the inlet of condense water pumps as per specifications and drawings.					
22.1	300 MM	Nos.	4			
23	<b>POT Strainer</b> Providing and fixing of pot strainer in the condenser water pipe as per specifications and drawings.					
23.1	600 MM	Nos.	2			
24	<b>Pressure Gauges</b> Providing and fixing pressure gauge with gauge cock, thermowell. complete as per specifications and drawings.					
		Nos.	16			
25	<b>Thermometers with thermowell</b> Providing and fixing thermometer Mercury filled V form type complete as per specifications and drawings.					
		Nos.	8			
26	<b>Flow Switches</b> Providing and fixing water flow switch on chilled water outlet complete as per specifications and drawings.					
		Nos.	4			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
27	<b>Thermowell (Test Point)</b>					
	Providing and fixing thermowell on chilled water pipe complete as per specifications and drawings.	Nos.	4			
28	<b>Automatic Air Vents</b>					
	Providing and fixing auto airvent purging valve complete as per specification and drawings.	Nos.	4			
29	<b>Hot Water Piping</b>					
29.1	Supply, Installation, Testing and Commissioning of following nominal sizes of Hot water piping <b>inside the building</b> (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges) duly insulated with 30mm thick rock wool as per specifications and drawings covered with a layer of 120 gm/sqm polythene sheet (vapour barrier) and finally applying 0.63mm aluminum sheet cladding complete with type 3, grade I roofing felt strip (as per IS:1322 as amended upto date) at the joints repairing of damage to building etc. as per specifications and as required.					
29.1.1	80 MM	RM	200			
29.1.2	65 MM	RM	100			
29.1.3	50 MM	RM	150			
29.1.4	40 MM	RM	200			
29.1.5	32 MM	RM	300			
29.1.6	25 MM	RM	500			
29.1.7	20 MM	RM	200			



Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
29.2	Supply, Installation, Testing and Commissioning of following nominal sizes of Hot water piping <b>Outside the building burried in ground</b> (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges) adequately supported on rigid supports and duly insulated with fire retardant quality expanded rock wool insulated pipe sections of density not less than 36 kg/cu.m after and secured with 0.5mmx20mm G.I wire mesh and two coats of cement plaster (each layer not less than 10mm) as per specifications including digging and refilling the trenches and providing suitable thichness 1:2:4 cement concrete pads at 3 m intervals complete as per specifications and as required.					
29.2.1	80 MM	RM	500			
	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the hot water plumbing duly insulated to the same specification as the connected piping and adequetly supported as per specifications.					
30	<b>Butterfly Valves</b>					
30.1	80 MM	Nos.	3			
31	<b>Ball Valves (With Strainer)</b>					
31.1.1	25 MM	Nos.	1			
31.1.2	20 MM	Nos.	24			
32	<b>Ball Valves (Without strainer)</b>					
32.1.1	25 MM	Nos.	1			
32.1.2	20 MM	Nos.	24			
33	<b>Motorized Butterfly Valves</b>					

Item No. 1	Description 2	Unit 3	Qty. 4	Rate (Rs.) 5	Rate in words (Rs.) 6	Amount(Rs.) 7
33.1	Providing and fixing the following motorized butterfly valves for hot water pumps and boiler as per specifications					
33.1.1	80 MM	Nos.	3			
34	<b><u>Balancing Valves</u></b>					
34.1	80 MM	Nos.	3			
35	<b><u>Non-Return Valves</u></b>					
35.1	80 MM	Nos.	2			
36	<b><u>Suction Guide</u></b> Providing and fixing of suction guide of following sizes  in the inlet of hot water pumps as per specifications					
36.1	80 MM	Nos.	2			
37	<b><u>Y - Strainers</u></b>					
37.1	80 MM	Nos.	1			
38	<b><u>Pressure Gauges</u></b> Providing and fixing pressure gauge with gauge cock, thermowell. complete as per specifications and drawings.	Nos.	56			
39	<b><u>Thermometers with thermowell</u></b> Providing and fixing thermometer Mercury filled V form type complete as per specifications and drawings.	Nos.	52			
40	<b><u>Flow Switches</u></b> Providing and fixing water flow switch on hot water outlet complete as per specifications and drawings.	No.	1			
41	<b><u>Automatic Air Vents</u></b> Providing and fixing auto airvent purging valve complete as per specification and drawings.	Nos.	2			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
42	<b><u>Thermowell of 15 mm dia.(Test Point)</u></b> Providing and fixing thermowell on hot water pipe complete as per specifications and drawings.	Nos.	50			
43	<b><u>Drain Piping</u></b> G. I. drain piping of 'B' Class complete with fittings, supports, valves and 2 layers of 6 mm thick Polyethylene Foam (Kinney Foam) insulation as per specifications and drawings.					
43.1	Providing and fixing pipes with all necessary fittings, supports and insulation.					
43.1.1	25 MM	RM	600			
43.1.2	32 MM	RM	200			
43.1.3	40 MM	RM	50			
43.1.4	50 MM	RM	50			
44	<b><u>On-line non-chemical water treatment system</u></b> Supply, Installation, Testing and Commissioning of On line, Non-Chemical Water Treatment Scale Preventor System : "Scale Guard" for 425 TR AC Chiller, having flow rate 6137 LPM	Nos.	4			
<b>Sub-Total 'B' Rs. :</b>						
<b><u>Part 'C' : Ducting and Grills</u></b>						
1	<b><u>Ducting</u></b> Supplying, Installation, Testing and Commissioning of GSS ducting of following thickness including necessary supports, adjustable dampers, vanes etc complete as per specifications.					
1.1	<b><u>G.I. Sheet Metal Ducting (Rectangular)- Factory Fabricated</u></b>					
1.1.1	26 Gauge	Sqm.	8000			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.1.2	24 Gauge	Sqm.	3500			
1.1.3	22 Gauge	Sqm.	900			
1.1.4	20 Gauge	Sqm.	90			
1.1.5	18 Gauge	Sqm.	10			
1.2	<b><u>Aluminum. Sheet Metal</u></b>					
1.2.1	22 Gauge	Sqm.	400			
1.2.2	20 Gauge	Sqm.	10			
1.2.3	18 Gauge	Sqm.	10			
1.3	<b><u>G.I. Sheet Metal Ducting (Rectangular)- Site Fabricated</u></b>					
1.3.1	0.63 MM (24 Gauge)	Sqm.	800			
1.3.2	0.80 MM (22 Gauge)	Sqm.	400			
1.3.3	1.00 MM (20 Gauge)	Sqm.	100			
1.3.4	1.2 MM (18 Gauge)	Sqm.	10			
1.4	<b><u>Aluminum. Sheet Metal</u></b>					
1.4.1	0.80 MM (22 Gauge)	Sqm.	50			
1.4.2	1.00 MM (20 Gauge)	Sqm.	10			
1.4.3	1.2 MM (18 Gauge)	Sqm.	10			
2	<b><u>Duct Insulation</u></b>					
	Closed cell, Fire retardant, self extinguishing type crossed linked polyethylene insulation density not less than 24 Kg/sqM, 'K' value not more than 0.028 Kcal/degC with adhesive tape etc. on ducts complete as per specification and drawings.					
2.1	10 MM Thick	Sqm.	100			
2.2	15 MM Thick	Sqm.	16000			
2.3	18MM thick with UV protection	Sqm.	20			
3	<b><u>Duct Acoustic Lining</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Providing and fixing duct acoustic lining with 25 mm thick Non woven polyster fibre insulation of density 48 kg/sqcm, covered with 0.5 mm perforated aluminium sheet, nuts, bolts etc. complete as per specifications and drawings.					
3.1	25 MM thick	Sqm.	2000			
4	<b><u>Grilles/Diffusers</u></b>					
4.1	Supply, Installation, Testing and Commissioning of powder coated extruded Aluminium section fresh air grill in weather maker room with aluminium volume control dampers, bird screen etc complete as required.					
4.1.1	Aluminium supply air grilles with damper.	Sqm.	120			
4.1.2	Aluminium return air grilles without damper.	Sqm.	470			
4.1.3	Aluminium supply air square diffuser with damper	Sqm.	115			
4.1.4	Aluminium return air square diffuser without damper.	Sqm.	75			
4.1.5	Aluminium supply air laminar flow diffusers with dampers for OT.	Sqm.	240			
4.1.6	Jet Nozzles for supply air as per specifications					
i.	8"	Nos.	5			
ii.	10"	Nos.	5			
4.1.7	HEPA filters 2' X 2'	Nos.	10			
5	<b><u>Fresh Air Louvers</u></b>					
	Supply, Installation, Testing and Commissioning of extruded aluminium louvres with frame bird screen 50 mm pre-filter with frame, mounting arrangement etc. as per specifications and drawings.					
5.1	Fresh Air Louvers	Sqm.	16			
6	<b><u>Damper</u></b>					
6.1	<b><u>Fire Damper</u></b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supplying, fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as & where required of required sizes including control wiring. The dampers shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be build mechanism and not externally mounted. The damper shall also be closed in event of a fire signal which shall be provided by the department in AHU room etc as per specification as required: a.) Fire dampers b.) Actuator					
6.1.1	Supply air fire damper	Sqm.	75			
6.1.2	Return air fire damper	Sqm.	80			
6.1.3	Motorised actuator for Dampers	Nos.	240			
6.1.4	Fresh air dampers	Sqm.	12			
7	<b>AHU Room Acoustic treatment</b>					
7.1	Supplying, fixing accoustic lining on wall and ceiling of AHU rooms with 50mm thick, density 32kg/cu.m resin bonded glass fibre/48 kg/cu.m mineral wool insulation friction fixed in 610mm X 610 mm frame work made of 25x50x50x50x25mm made out of 0.6mm thick G.I. sheet 'U' shaped channel and covered with reinforced fibre glass tissue and finished with 0.50 mm perforated aluminium sheet as per specifications.	Sqm.	2000			
		<b>Sub-Total 'C' Rs. :</b>				
	<b>Part 'D' : Electrical Works</b>					
1	<b>Electrical Control Panel</b>					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supplying, installation, testing and commissioning of cubical type main MV panel board suitable for 3 phases, 415 V, 50Hz and of 35 MVA rupturing capacity at 415 volts, fabricated from minimum 2 mm thick CRCA sheet powder coated through seven tank process facility for pickling and degreasing complete with following mountings, interconnections etc as required (Main Electric Panel) - BMS Compatible					
	<b>Main A.C. Panel-P1</b>					
1.1	<b>Incomer</b>					
1.1.1	2 Nos. 2000 Amps. EDO 415V ACB TP+NL 50 KA incoming drawout type complete with O/L and E/f protection (One incomer 2000 AMPS dedicated for emergency/D.G set)					
1.1.2	1 No. p 4000 Amps aluminium conductor bus bar duly sleeved					
1.1.3	1 No. 2000 Amps 415 V TP 5 HL, 50 KA ACB( EDO Type) without protection as bus bar coupler.					
1.1.4	1 No. Ammeter with ASS & CTs rating.					
1.1.5	1 No. voltmeter with VSS rating.					
1.1.6	3 Nos. phase indicating lamps into type switch					
1.2	<b>Outgoing</b>					
1.2.1	5 Nos. 1000 Amps 415V 35 KA TP+NL ACB outgoing for 425 TR Capacity chillers (1 Stand By).					
1.2.2	2 Nos. 630 Amps 415V 35 KA TP+NL MCCB outgoing for 200 KW hot water generator.					
1.2.3	1 No. 250 Amps 415V 35 KA TP+NL MCCB outgoing for 100 KW hot water generator.					
1.2.4	5 Nos. 100 Amps MCCB TP+NL 35 KA outgoing for condenser water pumps with 30 KW motor (1 standby)					
1.2.5	5 Nos. 32 Amps MCB TP+NL 10 KA outgoing for primary chilled water pumps with 11 KW motor. (1 standby)					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.2.6	2 Nos. 120 Amps MCCB TP+NL 25 KA outgoing for secondary chilled water pumps with 37.5 KW motor.(1 standby)					
1.2.7	2 Nos. 120 Amps MCCB TP+NL 25 KA outgoing for secondary chilled water pumps with 45 KW motor.(1 standby)					
1.2.8	2 Nos. 63 Amps MCCB TP+NL 25 KA outgoing for secondary chilled water pumps with 15 KW motor.(1 standby)					
1.2.9	2 Nos. 16 Amps MCB TP+NL 10 KA outgoing for hot water pumps with 2.2 KW motor.(1 standby)					
1.2.10	4 Nos. 100 Amps MCCB TP+NL 35 KA outgoing for 550 TR cooling tower with 10x2 KW motor					
1.2.11	1 No. 40 Amps MCB TP+NL 15 KA outgoing for plant room air washer with 7.5 KW motor					
1.2.12	2 Nos. 16 Amps MCB TP+NL 10 KA outgoing for plant room axial flow fans					
1.2.13	1 No. 63 35KA Amps MCCB TP+NL outgoing for spare					
1.2.14	5 Nos. automatic type star delta starter for cond. water pumps (30 KW) (1 stand by)					
1.2.15	5 Nos. star delta starter for 11 KW motor of primary chilled water pumps (1 standby)					
1.2.16	2 Nos. DOL starter for 2.2 KW motor of hot water pumps (1 standby)					
1.2.17	4 Nos. star delta starter for 10x2 KW motor of cooling tower 475 TR.					
1.2.18	1 Nos. star delta starter for 7.5 KW motor of air washer.					
1.2.19	4 Nos. DOL starter for 1.1 KW motor of axial fans					
1.3	<b>All starter shall have following accessories :</b>					
1.3.1	1 No. overload relay					
1.3.2	1 No. Ammeter with ASS & CTs.					
1.3.3	1 No. single phase preventer MPRD-2 type					
1.3.4	2 Nos. ON/OFF indicating lights					



Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.3.5	2 Nos. ON/OFF push buttons	Set	1			
2	<b><u>Sub Panel</u></b>					
2.1	Supplying, installation, testing and commissioning of MV panel board of cubical type, compartmentalised design fabricated from 2.0 mm thick CRCA sheet having necessary cable alleys, powder coated through seven-tank process facility for pricking and degreasing, including connections and inter connections as per specifications complete with following accessories as required( supply panels in each AHU room). (Note: Power supply up to the each sub panel shall be in the scope of client/other agencies)					
2.2	<b><u>Panel - P2</u></b> <b><u>OUTGOING</u></b>					
2.2.1	1 No. 16 Amps MCB 10 KA for 1.1-3.7 KW motor					
2.2.2	1 No. DOL Starter					
2.2.3	1 No. single phase preventer MPRD-2 type					
2.2.4	1 No. ammeter					
2.2.5	2 Nos indicating lights					
2.2.6	2 Nos. Push buttons	Sets	244			
2.3	<b><u>Panel - P3</u></b> <b><u>OUTGOING</u></b>					
2.3.1	1 No. 32 Amps MCB 10 KA for 5.5 KW motor					
2.3.2	1 No. Star Delta Starter					
2.3.3	1 No. single phase preventer MPRD-2 type					
2.3.4	1 No. ammeter					
2.3.5	2 Nos indicating lights					
2.3.6	2 Nos. Push buttons	Sets	20			
2.4	<b><u>Panel - P4</u></b> <b><u>OUTGOING</u></b>					
2.4.1	1 No. 40 Amps MCB 10 KA for 7.5/9.3 KW motor					
2.4.2	1 No. Star Delta Starter					
2.4.3	1 No. single phase preventer MPRD-2 type					
2.4.4	1 No. ammeter					
2.4.5	2 Nos indicating lights					

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
2.4.6	2 Nos. Push buttons	Sets	30			
2.5	<b><u>Panel - P5</u></b> <b><u>OUTGOING</u></b>					
2.5.1	1 No. 100 Amps MCCB 25 KA for 11/15/18.5/22 KW motor					
2.5.2	1 No. Star Delta Starter					
2.5.3	1 No. single phase preventer MPRD-2 type					
2.5.4	1 No. ammeter					
2.5.5	2 Nos indicating lights					
2.5.6	2 Nos. Push buttons	Sets	26			
3	<b><u>Weather Proof isolators for cooling towers.</u></b>					
	Supply, installation, testing and commissioning of out door weather proof switch box of continuous welded construction, fabricated out of 2 mm thick G.I. sheet complete with water tight gasket with front openable and lockable door including earthing, painting, glands, danger boards etc. suitable for mounting on wall with M.S. angle iron frame of size 40x40x6 mm consisting of relevant I.S. specifications and drawings.					
3.2.1	100 Amps TP+NL Isolator for cooling towers near cooling towers.	Set	4			
4.	<b><u>Earthing</u></b>					
4.1	Earthing with copper Earth plate 600 mm x 600 mm x 6 mm thick including accessories and providing masonry enclosures with cover plate having locking arrangement and watering pipe etc.(but without charcole, cokeand salt complete as required.)	Set	2			
4.2	Extra for using charcole and salt for copper plate earth electrode as required.	Set	2			
4.3	Providing and fixing 25 mm x 5 mm copper strip in 40 mm dia GI pipe earth electrode as required.	Set	36			

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
4.4	Providing and fixing copper Earth strip on walls/trenches complete as per specification and as required.					
4.4.1	25 mm x 5 mm	Rm	300			
4.5	Providing and fixing earth wire along with cable complete as per specifications and as required.					
4.5.1	6 SWG	Rm	800			
6	<b>Electrical cable</b>					
	Providing and fixing PVC insulated armoured aluminium conductor cables from main panel boards to various equipments through walls/ceiling with appropriate clamps and fixing arrangements, termination etc. as per specifications and drawings.					
6.1	3 1/2 Core - 240 mm <sup>2</sup>	RM	250			
6.2	3 1/2 Core - 185 mm <sup>2</sup>	RM	60			
6.3	3 1/2 Core - 150 mm <sup>2</sup>	RM	70			
6.4	3 Core - 35 mm <sup>2</sup>	RM	250			
6.5	3 Core - 16 mm <sup>2</sup>	RM	450			
6.6	3 Core - 10 mm <sup>2</sup>	RM	200			
6.7	3 Core - 6 mm <sup>2</sup>	RM	400			
6.8	3 Core - 4 mm <sup>2</sup>	RM	100			
6.9	3 Core - 2.5 mm <sup>2</sup>	RM	20			
7.	<b>Cable Tray</b>					
	Fabricating and installing perforated MS cable trays including horizontal and vertical bends, reducers, tees cross members and other accessories as required and duly suspended from the ceiling with M.S. suspenders and including painting etc. as required.					
7.1	100 mm x 50 mm x 1.6 mm	Rm	200			
7.2	300 mm x 62.5 mm x 1.6 mm	Rm	20			
<b>Sub-Total 'D' Rs. :</b>						

Item No.	Description	Unit	Qty.	Rate (Rs.)	Rate in words (Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
<b>Part 'E' : Operation and Maintenance</b>						
1	Operation and maintenance (routine and preventive) of the high side & low side of the air conditioning plant comprising of all the machinery, equipment installed in the AC plant room including cooling towers in <b>three shift of 8 hours each</b> per day for the defect liability period of one year as per maintenance schedule attached at Annexure "H". Plant shall however be operated for 8 months from March to October.	1 Job	1 Job			
1.1	1st year	1 Job	1 Job			
1.2	2nd year	1 Job	1 Job			
1.3	3rd year	1 Job	1 Job			
1.4	4th year	1 Job	1 Job			
1.5	5th year	1 Job	1 Job			
		<b>Sub-Total 'E' Rs. :</b>				

**BILL OF QUANTITIES**

**FOR**

**HVAC WORKS**

**AT**

**LADY HARDINGE MEDICAL COLLEGE  
NEW DELHI**

**( ACADEMIC BLOCK)**

**Bill of Quantities - Academic Block at Lady Hardinge, New Delhi**

The prices are to be quoted in the below mentioned form and shall include the supply and installation at site of all the equipments, ancillary materials as specified and all such items whatsoever which may be required to fulfil the intent and purpose as laid down in the specification and/or the drawings.

**Note:** a) All Equipment should be BMS Compatiable with BACnet / MODbus/Lonworks application

b) All equipments RCC/ Cement concrete foundation to be included in the quote

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
<b>Part-A : Machinery</b>						
1	<b><u>Water Chilling Unit</u></b>					
1.1	Supply, Installation, Testing and Commissioning of water cooled packaged Screw Water chiller machines each having a capacity of 300 TR at chilled water inlet/outlet temperature of 12.22°C /6.7°C with circulation rate of 2736 LPM (nominal), suitable for operation on refrigerant R134a each comprising of the following complete as per specification and as required					
a)	1 No.- multi screw type compressor semi hermatic complete with automatic capacity control, safety switches, speed increasing gears, forced feed lubrication system etc. as per specifications.					
b)	1 No.- Suitable capacity squirrel cage induction motor with class 'F' insulation suitable for operation on 415±10% volts, 50 Hz A.C. supply.					

<b>Item No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty.</b>	<b>Rate(Rs.)</b>	<b>Rate in words(Rs.)</b>	<b>Amount(Rs.)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
c)	1 No. close transition type automatic star delta starter suitable for compressor motor complete with ammeter with CT's over load protection, under voltage protection against phase reversal and independent single phase preventors etc. complete as required.					
d)	Necessary drive arrangement.					
e)	1 Set- Lubrication Device consisting of automatic electric oil pump, oil cooler, head tank, oil strainer, automatic pressure regulating valve, oil heater, oil heater thermal switch etc. as per specifications.					
f)	1 No.- Matching shell and tube water cooled condenser of M.S. shell and integrally finned copper tubes.					
g)	1 No.- Matching shell and tube flooded type chiller of M.S. shell and integrally finned copper tubes.					
h)	1 Lot- refrigerant piping fittings, valve and accessories to inter connect compressor, condenser, chiller and expansion valve.					
i)	1 Set- Microprocessor based control panel complete with accessories as per specifications.					
j)	Lot- Refrigerant line accessories comprising of safety valves, angle valve, liquid line indications, liquid levelcontrol etc.					
k)	Lot- water flow switches at inlet and outlet of condenser & chiller, water drain and air purge valves wherever required.					
l)	Lot- Suction line and chiller insulation with minimum 19 mm thick polyvinyl nitrile rubber insulation finished with 0.63 mm thick G.S.S. cladding complete as required.					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
m)	Lot- Frame work for mounting the above condenser, chiller, compressor and motor with base plate complete with antivibration pads/ springs.					
n)	Lot- Initial/First charge of refrigerant gas and compressor oil.					
o)	Lot- RCC/Cement concrete foundation for the chilling unit.					
1.1.1	Cooling Capacity :300 TR					
1.1.2	Water in condenser in/out : 32.2 °C / 36.4 °C					
1.1.3	Chilled water 'In' : 12.22 °C					
1.1.4	Chilled water 'Out' : 6.7 °C					
1.1.5	Chiller Fouling Factor : 0.0005					
1.1.6	Condenser Fouling Factor : 0.001					
1.1.7	Configuration :- 3 Working					
1.1.8	IKW: 0.69 KW As Per ECBC COP 5.75, IPLV 6.43	Nos.	3			
1.2	<b><u>Third Party Inspection Charges</u></b>					
	Factory testing charges for 300 TR one No.Water Cooled screw chiller at 100%,75%,50% and 25% load point at works. Charges should include four persons visit ( local traveling/ lodging & boarding)	Lot	1			
2	<b><u>Pumps</u></b>					
2.1	<b><u>Primary Chilled Water Pumps</u></b>					
	Supply, Installation, Testing and Commissioning of end suction chilled water circulating pump set capable of delivering 2736 LPM of water against a head of 12 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. end suction type pump					



Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415 ±10% volt, 3 phase, 50 hz A.C supply					
c)	Lot - Expanded polystyrene (T.F quality) insulation of not less than 50 mm thick duly claded between aluminum sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.					
d)	2 Nos. 150 mm dia. Dail type pressure gauges.					
e)	Lot- Mounting frame work with anti vibration pads.					
f)	Lot- RCC/Cement concrete foundation for the pump unit.					
	Note: One set of pump shall be used as stand by.					
2.1.1	Chilled water 2736 LPM (7.5 KW) at 12 m head (1 standby).	Nos.	4			
3	<b>Secondary Chilled water pumps</b>					
	Supply, Installation, Testing and Commissioning of Split casing chilled water circulating pump set capable of delivering 4305 & 1632 LPM of water against a head of 18 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. Split casing/Mono block type pump					
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm synchronous speed, operating on 415 ± 10% volt, 3 phase, 50 hz A.C supply					
c)	Lot - Expanded polystyrene (T.F quality) insulation of not less than 50 mm thick duly claded between aluminum sheets of 0.5 mm thickness and properly clamped to pump in two semicircular sections as per specifications.					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
d)	2 Nos. 150 mm dia. Dail type pressure gauges.					
e)	Lot- Mounting frame work with anti vibration pads.					
f)	Lot- RCC/Cement concrete foundation for the pump unit.					
3.1	<b>For Academic Block</b>					
	Chilled water 4305 LPM (18.5 KW) at 18 M head (1 standby)	Nos.	3			
	Control panel with VFDs, 1 DPTs and PLC with duly downloaded software for Secondary chilled water pumps of capacity 4305 LPM & 1632 LPM	Sets	1			
3.2	<b>For Auditorium</b>					
	Chilled water 1632 LPM (7.5 KW) at 18 M head (1 standby)	Nos.	2			
	Control panel with VFDs, 1 DPTs and PLC with duly downloaded software for Secondary chilled water pumps of capacity 4305 LPM & 1632 LPM	Sets	1			
4	<b>Condenser Water Pumps</b>					
	Supply, Installation, Testing and Commissioning of split casing condenser water circulating pump set capable of delivering 4332 LPM of water against a head of 22 meters. Each pump shall comprise of following as required as per specifications					
a)	1 No. Split casing type pump					
b)	1 No. suitable HP, SPDP squirrel cage induction motor with class "B" insulation, 2900 rpm sunchronous speed, operating on 415±10% volts, 3 phase, 50 htz A.C supply					
c)	2 Nos. 150 mm dia. Dail type pressure gauges.					
d)	Lot- Mounting frame work with anti vibration pads.					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
e)	Lot- RCC/Cement concrete foundation for the pump unit.					
	Note: One set of pump shall be used as stand by.					
4.1	Condenser water pump 4332 LPM (15 KW) at 22 M head (1 stand by)	Nos.	4			
5	<b><u>FRP Cooling Tower</u></b>					
	Supply, installation, testing and commissioning of FRP cooling tower of 1134000 Kcal/hr heat rejection capacity with FRP water basin, PVC fillings with integral louvers and drift eliminators complete with hot water basin either fitted with spray nozzles or having self rotating sprinklers, statically and dynamically balanced axial flow fan direct driven or driven through speed reduction gear box with TEFC induction motor, suction screen, make up- quick fill arrangement, over flow and drain pipe connections with valves and suitable inspection ladder, access arrangement for cooling tower interior, cement concrete foundation, steel/masonry supporting structure, anti vibration mountings etc. as per specifications and as required.					
5.1	375 TR capacity @ 28.4 Deg.C Wb (Ambient)					
5.2	Flow Rate : 4332 LPM					
5.3	Motor (7.5 KW x 2)					
5.4	Cooling Tower 'IN' Temp. : 36.4°C					
5.5	Cooling Tower 'OUT' Temp.: 32.2°C	Nos.	3			
6	<b><u>Horizontal Type Air Handling Units</u></b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
6.1	Supply, Installation, Testing and Commissioning of factory built, floor mounted horizontal type, chilled water Double skin type AHU duly fitted with photohydro ionization system, made of 25 mm thick panels consisting of G.I casing of thickness 0.8 outside and 0.8 inside layer with factory injected PUF injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as detailed below, minimum 2 bend GSS/ PVC eliminators, cooling coil section with aluminum finned copper tubes( tube thickness not less than 0.5mm), filter section with 50 mm thick metal viscous/ washable synthetic type air pre filters, belt drive package with TEFC drive motor suitable for 415 ±10% volts, 50Hz 3 phase, A.C supply, drain connection, stainless steel drain pan thermometers and pressure gauges at inlet and outlet of the coil, necessary vibration isolation arrangement etc complete as per specifications and drawings of as follows :					
6.1.1	10000 CFM with 4 Rows Cooling Coil, 20 sqft. Coil Area, 7.5 KW motor, 40 mm static pressure.	Nos.	4			
6.1.2	12000 CFM with 4 Rows Cooling Coil, 24 sqft. Coil Area, 7.5 KW motor, 40 mm static pressure.	No.	1			
6.1.3	14000 CFM with 4 Rows Cooling Coil, 28 sqft. Coil Area, 7.5 KW motor, 40 mm static pressure.	No.	0			
6.1.4	15000 CFM with 4 Rows Cooling Coil, 30 sqft. Coil Area, 7.5 KW motor, 40 mm static pressure.	Nos.	2			
6.1.5	16000 CFM with 4 Rows Cooling Coil, 32 sqft. Coil Area, 7.5 KW motor, 40 mm static pressure.	Nos.	2			
6.1.6	18000 CFM with 6 Rows Cooling Coil, 36 sqft. Coil Area, 9.3 KW motor, 50 mm static pressure.	No.	1			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
7	<b>Unitary Type Air Handling Units</b>					
	<b>Ceiling suspended</b>					
7.1	Supply, Installation, Testing and Commissioning of factory built, ceiling suspended type, chilled water Double skin type AHU duly fitted with photohydro ionization system, made of 25 mm thick panels consisting of G.I casing of thickness 0.8 outside and 0.8 inside layer with factory injected PUF injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as detailed below, minimum 2 bend GSS/ PVC eliminators, cooling coil section with aluminum finned copper tubes( tube thickness not less than 0.5mm), filter section with 50 mm thick metal viscous/ washable synthetic type air pre filters, belt drive package with TEFC drive motor suitable for 415 ±10% volts, 50Hz 3 phase, A.C supply, drain connection, stainless steel drain pan thermometers and pressure gauges at inlet and outlet of the coil, necessary vibration isolation arrangement etc complete as per specifications and drawings of as follows :					
7.1.1	2000 cfm with 4 Rows Cooling Coil 4 Sqft. Coil Area, 1.1 KW motor, 30 mm static perssure.	Nos.	10			
7.1.2	2500 cfm with 4 Rows Cooling Coil 5 Sqft. Coil Area, 1.1 KW motor, 30 mm static perssure.	Nos.	9			
7.1.3	3500 cfm with 4 Rows Cooling Coil 7 Sqft. Coil Area, 1.1 KW motor, 30 mm static perssure.	No.	1			
7.1.4	4000 cfm with 4 Rows Cooling Coil 8 Sqft. Coil Area, 2.2 KW motor, 30 mm static perssure.	No.	1			
7.1.5	5000 cfm with 4 Rows Cooling Coil 10 Sqft. Coil Area, 2.2 KW motor, 30 mm static perssure.	Nos.	3			
7.1.6	6000 cfm with 4 Rows Cooling Coil 12 Sqft. Coil Area, 3.7 KW motor, 30 mm static perssure.	Nos.	3			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
<b>7.2</b>	<b><u>Treated Fresh Air Unit</u></b>					
7.2.1	2000 cfm with 8 Rows Cooling Coil 4 Sqft. Coil Area, 1.1 KW motor, 50 mm static perssure.	Nos.	1			
7.2.2	2500 cfm with 8 Rows Cooling Coil 5 Sqft. Coil Area, 1.1 KW motor, 50 mm static perssure.	Nos.	8			
<b>8</b>	<b><u>AHU's Controls/Dynamic Balancing Valves</u></b>					
8.1	Supply, Installation, Testing and commissioning of complete controls for AHUs comprising of Electronic, self balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valves in a single body. The actuator shall be capable of accepting 2-10VCD, 4-20mA electric signal and shall provide similar transduced feedback output signal to control system. The minimum close off pressure of actuator must be 1.5 times shut off head of pump as per specifications and drawing of following sizes.					
8.1.1	Water flow rate 10-36 USGPM, 25/32/40 MM	Nos.	33			
8.1.2	Water flow rate 60-80 USGPM, 50/65 MM	Nos.	5			
8.1.3	Water flow rate 81-100 USGPM, 65/80 MM	Nos.	5			
8.1.4	Modulating Thermostats	Nos.	43			
<b>9</b>	<b><u>Fan Coil Units.</u></b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
9.1	Supply, Installation, Testing and commissioning of fan coil units having following capacities, ceiling /wall mounted, complete with copper tubes, chilled water Cooling Coils having aluminum fins and auxiliaries including ball valve set, insulation of drain pan, drain connectors, blower, TEFC slow speed (3 speed) squirrel cage induction motor suitable for operation on 230 volts, single phase, 50hz , A.C supply, air pre-filters etc.					
9.1.1	400 CFM (1.0 TR)	Nos.	107			
9.1.2	600 CFM (1.5 TR)	Nos.	36			
9.1.3	800 CFM (2.0 TR)	Nos.	4			
9.1.4	1000 CFM (2.5 TR)	Nos.	7			
9.1.5	1200 CFM (3.0 TR)	No.	1			
10	<b><u>Fan Coil Unit Controls</u></b>					
10.1	Supply, Installation, Testing and Commissioning of Controls for Fan Coil Units consisting of 2 way motorized valve, room thermostat with ON/Off switch, 3 speed selector switch, electrical wiring etc.					
10.1.1	Water Flow Rate 2.4 USGPM	Nos.	107			
10.1.2	Water Flow Rate 3.6 USGPM	Nos.	36			
10.1.3	Water Flow Rate 4.8 USGPM	Nos.	4			
10.1.4	Water Flow Rate 6.0 USGPM	Nos.	7			
10.1.5	Water Flow Rate 7.2 USGPM	Nos.	1			
10.1.6	Thermostats with 3 speed fan control	Nos.	155			
11	<b><u>Ventilation Equipment</u></b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
11.1	<b><u>Air Washer</u></b>					
	Providing and fixing of package type air washer complete with G.I blower section, DIDW blower, with motors, base, drive arrangement, etc. cooling pad section, stainless steel tank, G.I. housing, filter plenum motor drive, G.I. piping, with valves and fittings etc. as per specifications and drawings including all necessary civil works PVC eliminators.					
11.1.1	20,000 CFM @ 50 mm wg, (Dining hall)	Nos.	2			
11.1.2	15,000 CFM @ 45 mm wg, (Dining hall)	Nos.	1			
11.1.3	10,000 CFM @ 35 mm wg, (AC Plant)	Nos.	2			
11.1.4	9,000 CFM @ 35 mm wg, (Kitchen)	Nos.	2			
11.1.5	3,000 CFM @ 25 mm wg, (Kitchen)	No.	1			
11.2	<b><u>Kitchen Scrubber</u></b>					
	Supplying, Installing, Testing and Commissioning of package type air scrubber complete with DIDW backward curved centrifugal blowers with motors, Base, drive arrangement, motor accessories etc., cleaning pad, tank fabricated from 18 gauge 304A S.S. sheets, FRP water distribution header having uniform sized ports, water distribution pump, fire resisting flexible canvass connection for fans Complete as per specifications and drawings including accessories etc. as required.					
11.2.1	8000 CFM @ 35 mm wg	No.	1			
11.2.2	11000 CFM @ 35 mm wg	No.	1			
11.2.3	10000 CFM @ 35 mm wg	Nos.	2			
12	<b><u>Axial Flow Fans</u></b>					



Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supplying, Installing, Testing and Commissioning of Axial flow fans complete with motor, supporting frame, gravity louvres, weldmesh inlet guard etc. as per drawings and specifications (Sound level not to exceed 70 db at 3m).					
12.1	750 dia, 8,000 CFM @ 15 mm wg,	Nos.	1			
12.2	600 dia, 5,000 CFM @ 15 mm wg, (AC Plant Room)	Nos.	2			
13	<b>Fan section</b>					
	Supplying, Installing, Testing and Commissioning of fan Section with (Backward curved) Centrifugal DIDW Blowers with motors, Base frame, drive arrangement, motor accessories etc. as per specifications and drawings as required.					
13.1	<b>For Liftwell Pressurization</b>					
13.1.1	12000 CFM @ 50 mm wg	Nos.	2			
13.1.2	18000 CFM @ 50 mm wg	No.	1			
13.2	<b>For Lift Lobby Pressurization</b>					
13.2.1	6000 CFM @ 50 mm wg	Nos.	3			
13.3	<b>For Toilet Exhaust</b>					
13.3.1	3500 CFM @ 50 mm wg	No.	1			
13.3.2	7000 CFM @ 50 mm wg	No.	1			
14	<b>Inline Fans</b>					
	Supplying, Installing, Testing and Commissioning of Inline fans complete with motor, supporting frame, gravity louvres,etc. as per drawings and specifications.					
14.1	250 CFM @ 15 mm wg	Nos.	10			
14.2	500 CFM @ 15 mm wg	Nos.	10			
14.3	750 CFM @ 15 mm wg	Nos.	10			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
15	<b>Propeller Fans</b>					
	Supplying, Installing, Testing and Commissioning of propeller fans complete with motor, supporting frame, gravity louvres,etc. as per drawings and specifications.					
15.1	450 MM Dia. @ 15 mm wg	Nos.	50			
15.2	300 MM Dia. @ 15 mm wg	Nos.	75			
16	<b>AIR OZONE SYSTEM</b>					
	Supply, Installation , testing , commissioning and handing over of the imported Air Ozone System for maintaining indoor Air Quality. The components of the system must be in strict conformity with the specifications.and shall be including freight from Delhi Airport to site ,Insurance,Lifting,Shifting etc.as required . Single phase power supply for the Ozone Generators will be provided near the controller by others. The prices to include all connected wiring between the duct mounted ozone generator, VOC sensor / Controller. The power supply to the Ozone monitor will be provided near the respective equipment by others . But the wiring between the ozone moniter / switch and controller will be included in the scope. also shall be included the supply installation , Testing & commisioning of Motorised Fresh air Damper.					
	Duct mounted ozone generators suitable for the following floor area mentioned in the basis of design					
	<b>Academic Block</b>					
	<b>Ground Floor</b>					
	Lecture Hall	SET	1			
	<b>First Floor</b>					



Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.1.4	200 MM	RM	100			
1.1.5	150 MM	RM	100			
1.1.6	125 MM	RM	80			
1.1.7	100 MM	RM	350			
1.1.8	80 MM	RM	100			
1.1.9	65 MM	RM	200			
1.1.10	50 MM	RM	200			
1.1.11	40 MM	RM	250			
1.1.12	32 MM	RM	200			
1.1.13	25 MM	RM	500			
1.1.14	20 MM	RM	50			
1.2	Supply, Installation, Testing and Commissioning of following nominal sizes of Chilled water piping <b>Outside the building burried in ground</b> (with necessary clamps, vibration isolators and fitttings but excluding valves, strainers, gauges) adequately supported on rigid supports and duly insulated with fire retardant quality expanded polysterene molded pipe sections of density not less than 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500 gm polythene faced hessain and secured with 0.5mmx20mm G.I wire mesh and two coats of cement plaster (each layer not less than 10mm) as per specifications including digging and refilling the trenches and providing suitable thichness 1:2:4 cement concrete pads at 3 m intervals complete as per specifications and as required.					
1.2.1	350 MM	RM	10			
1.2.2	250 MM	RM	200			
	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specification as the connected piping and adequetly supported as per specifications.					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
2	<b>Butterfly Valves</b>					
	Supply, installation, testing and commi-ssioning of butterfly valves along with flanges as per specifications and drawings.					
2.1	200 MM	Nos.	3			
2.2	150 MM	Nos.	7			
2.3	125 MM	Nos.	2			
2.4	80 MM	Nos.	2			
2.5	65 MM	Nos.	10			
2.6	50 MM	Nos.	8			
2.7	40 MM	Nos.	16			
3	<b>Ball Valves (With Strainer)</b>					
3.1	Providing and fixing in position the following Ball Valves with strainer duly insulated as per specifications:					
3.1.1	32 MM	Nos.	17			
3.1.2	25 MM	Nos.	16			
3.1.3	20 MM	Nos.	149			
4	<b>Ball Valves (Without strainer)</b>					
4.1	Providing and fixing in position the following Ball Valves without strainer duly insulated as per specifications:					
4.1.1	32 MM	Nos.	17			
4.1.2	25 MM	Nos.	16			
4.1.3	20 MM	Nos.	149			
5	<b>Motorized Butterfly Valves</b>					
5.1	Providing and fixing the following motorized butterfly valves for chilled water pumps					
5.1.1	150 MM	Nos.	7			
5.1.2	125 MM	Nos.	2			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
6	<b><u>Balancing Valves</u></b>					
	Supply, installation, testing and commi-ssioning of balancing valves along with flanges as per specifications and drawings.					
6.1	200 MM	Nos.	3			
6.2	150 MM	Nos.	7			
6.3	125 MM	Nos.	2			
7	<b><u>Non-Return Valves</u></b>					
	Supply, installation, testing and commi-ssioning of non return valves dual plate type along with flanges as per specifi-cations and drawings.					
7.1	200 MM.	Nos.	3			
7.2	150 MM.	Nos.	4			
7.3	125 MM	Nos.	2			
8	<b><u>Suction Guide</u></b>					
	Providing and fixing of suction guide of following sizes in the inlet of chilled water pumps					
8.1	200 MM.	Nos.	3			
8.2	150 MM.	Nos.	4			
8.3	125 MM	Nos.	2			
9	<b><u>Y - Strainers</u></b>					
	Supply, installation, testing and commi-ssioning of Y - strainer along with flanges connection complete as per specifications and drawings.					
9.1	80 MM	Nos.	1			
9.2	65 MM	Nos.	5			
9.3	50 MM	Nos.	4			
9.4	40 MM	No.	8			
10	<b><u>Pressure Gauges</u></b>					
	Providing and fixing pressure gauge with gauge cock, thermowell. complete as per specifications and drawings.	Nos.	144			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
11	<b>Thermometers with thermowell</b> Providing and fixing thermometer Mercury filled V form type complete as per specifications and drawings.	Nos.	130			
12	<b>Flow Switches</b> Providing and fixing water flow switch on chilled water outlet complete as per specifications and drawings.	Nos.	4			
13	<b>Automatic Air Vents</b> Providing and fixing auto airvent purging valve complete as per specification and drawings.	Nos.	10			
14	<b>Thermowell of 15 mm dia.</b> Providing and fixing thermowell on chilled water pipe complete as per specifications and drawings.	Nos.	10			
15	<b><u>Expansion tank</u></b> supplying, installation, testing and commissioning of M.S. expansion tank of size 0.6m X 0.6m height made of 3mm thick expanded polysterene (TF quality) insulation covered with vapour barrier, 0.5mm X 20m GI wire mesh netting and finished with 0.5 thick GI cladding duly plastered and complete with vent and draing connections with float valve, quick fill and control valve etc as required.					
15.1	1500 Liters	No.	1			
16	<b><u>Condenser Water Piping</u></b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
16.1	Supplying, fixing, Testing and Commissioning Condenser water piping of following sizes and materials along with necessary clamps, vibration-isolators, and fittings such as bends, tees etc but excluding strainer and gauges etc adequately supported on rigid supports/burried in ground including excavation & refilling etc of heavy class as per specification and as required					
16.1.1	450 MM	RM	200			
16.1.2	400 MM	RM	20			
16.1.3	350 MM	RM	50			
16.1.4	200 MM	RM	60			
16.1.5	150 MM	RM	40			
16.1.6	100 MM	RM	40			
16.1.7	50 MM	RM	50			
17	<b><u>Butterfly Valves</u></b>					
	Supply, installation, testing and commi-ssioning of butterfly valves along with flanges as per specifications and drawings.					
17.1	350 MM	Nos.	3			
17.2	200 MM	Nos.	13			
17.3	100 MM	Nos.	3			
17.4	50 MM	Nos.	3			
18	<b><u>Motorized Butterfly Valves</u></b>					
	Providing and fixing the following motorized butterfly valves as per specifications and drawings:					
18.1	200 MM	Nos.	6			
19	<b><u>Balancing Valves</u></b>					
	Supply, installation, testing and commi-ssioning of balancing valves along with flanges as per specifications and drawings.					
19.1	200 MM	Nos.	10			



Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
20	<b>Float Valves</b>					
	Supply, installation, testing and commissioning of float valves as per specifications and drawings.					
20.1	200 MM	Nos.	3			
21	<b>Non-Return Valves</b>					
	Supply, installation, testing and commissioning of non return valves dual plate type along with flanges as per specifications and drawings.					
21.1	200 MM	Nos.	4			
22	<b>Suction Guide</b>					
	Providing and fixing of suction guide of following sizes in the inlet of condense water pumps as per specifications and drawings.					
22.1	200 MM	Nos.	4			
23	<b>POT Strainer</b>					
	Providing and fixing of pot strainer in the condenser water pipe as per specifications and drawings.					
23.2.1	450 MM	No.	1			
24	<b>Pressure Gauges</b>					
	Providing and fixing pressure gauge with gauge cock, thermowell. complete as per specifications and drawings.	Nos.	20			
25	<b>Thermometers with thermowell</b>					
	Providing and fixing thermometer Mercury filled V form type complete as per specifications and drawings.	Nos.	12			
26	<b>Flow Switches</b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Providing and fixing water flow switch on chilled water outlet complete as per specifications and drawings.	Nos.	3			
27	<b>Thermowell</b>					
	Providing and fixing thermowell on chilled water pipe complete as per specifications and drawings.	Nos.	3			
28	<b>Automatic Air Vents</b>					
	Providing and fixing auto airvent purging valve complete as per specification and drawings.	Nos.	3			
29	<b>Pipe Cladding</b>					
29.1	Supply, Installation, Testing and Commissioning of Aluminium cladding with 0.5 mm aluminium sheet with overlap on joints and fixed with self tapping screws etc. on chilled water/hot water piping on the terrace, inside AHU rooms etc. as per specifications and drawings.	sqm.	200			
30	<b>Drain Piping</b>					
	G. I. drain piping of 'B' Class complete with fittings, supports, valves and 2 layers of 6 mm thick Polyethylene Foam (Kinney Foam) insulation as per specifications and drawings.					
30.1	Providing and fixing pipes with all necessary fittings, supports and insulation.					
30.1.1	25 MM	RM	200			
30.1.2	32 MM	RM	150			
30.1.3	40 MM	RM	300			
30.1.4	50 MM	RM	100			
31	<b>On-line non-chemical water treatment system</b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Supply, Installation, Testing and Commissioning of On line, Non-Chemical Water Treatment Scale Preventor System : "Scale Guard" for 300 TR AC Chiller, having flow rate 6137 LPM	Nos.	3			
				<b>Sub-Total 'B' Rs. :</b>		
<b>Part 'C' : Ducting and Grills</b>						
1	<b>Ducting</b> Supplying, Installation, Testing and Commissioning of GSS ducting of following thickness including necessary supports, adjustable dampers, vanes etc complete as per specifications.					
1.1	<b>G.I. Sheet Metal Ducting (Rectangular)- Factory Fabricated</b>					
1.1.1	26 Gauge	Sqm.	7000			
1.1.2	24 Gauge	Sqm.	2400			
1.1.3	22 Gauge	Sqm.	350			
1.1.4	20 Gauge	Sqm.	100			
1.1.5	18 Gauge	Sqm.	10			
1.2	<b>G.I. Sheet Metal Ducting (Rectangular)- Site Fabricated</b>					
1.2.1	0.63 MM (24 Gauge)	Sqm.	800			
1.2.2	0.80 MM (22 Gauge)	Sqm.	250			
1.2.3	1.00 MM (20 Gauge)	Sqm.	50			
1.2.4	1.2 MM (18 Gauge)	Sqm.	10			
2	<b>Duct Insulation</b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	Closed cell, Fire retardant, self extinguishing type crossed linked polyethylene insulation density not less than 24 Kg/sqM, 'K' value not more than 0.028 Kcal/degC with adhesive tape etc. on ducts complete as per specification and drawings.					
2.1	10 MM Thick	Sqm.	8000			
2.2	15 MM Thick	Sqm.	100			
2.3	18MM thick with UV protection	Sqm.	10			
3	<b><u>Duct Acoustic Lining</u></b>					
	Providing and fixing duct acoustic lining with 25 mm thick Non woven polyster fibre insulation of density 48 kg/sqcm, covered with 0.5 mm perforated aluminium sheet, nuts, bolts etc. complete as per specifications and drawings.					
3.1	25 MM thick	Sqm.	600			
4	<b><u>Grilles/Diffusers</u></b>					
4.1	Supply, Installation, Testing and Commissioning of powder coated extruded Aluminium section fresh air grill in weather maker room with aluminium volume control dampers, bird screen etc complete as required.					
4.1.1	Aluminium supply air grilles with damper.	Sqm.	50			
4.1.2	Aluminium return air grilles without damper.	Sqm.	135			
4.1.3	Aluminium supply air square diffuser with damper	Sqm.	110			
4.1.4	Aluminium return / exhaust air square diffuser without	Sqm.	100			
4.1.5	Aluminium supply air laminar flow diffusers with damper.	Sqm.	1			
4.1.6	Jet Nozzles for supply air as per specifications					
i.	10"	Nos.	100			
ii.	12"	Nos.	50			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
5	<b><u>Fresh Air Louvers</u></b>					
	Supply, Installation, Testing and Commissioning of extruded aluminium louvres with frame bird screen 50 mm pre-filter with frame, mounting arrangement etc. as per specifications and drawings.					
5.1	Fresh Air Louvers	Sqm.	10			
6	<b><u>Fire Damper</u></b>					
6.1	Supplying, fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as & where required of required sizes including control wiring. The dampers shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be build mechanism and not externally mounted. The damper shall also be closed in event of a fire signal which shall be provided by the department in AHU room etc as per specification as required: a.) Fire dampers b.) Actuator					
6.1.1	Supply air fire damper	Sqm.	40			
6.1.2	Return air fire damper	Sqm.	50			
6.1.3	Spring return actuator with panel of Motorised actuator for Dampers	Nos.	75			
6.1.4	Fresh air & Duct volume control dampers	Sqm.	20			
7	<b><u>AHU Room Acoustic treatment</u></b>					

<b>Item No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty.</b>	<b>Rate(Rs.)</b>	<b>Rate in words(Rs.)</b>	<b>Amount(Rs.)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
7.1	Acoustic treatment of wall and cieling of AHU rooms with 50 mm thick Non woven polyster fibre insulation of density 32 kg/sqcm, fixed in 610mm X 610mm frame work made of 25x50x50x50x25 covered with 0.5 mm perforated aluminium sheet, nuts, bolts etc. complete as per specifications and drawings.	Sqm.	2000			
8	<b><u>Underdeck Insulation</u></b>					
	providing and fixing of crossed linked polyethylene insulation 15 mm thich fire retardand, self extinguishing type, density not less than 24 Kg/sqM, 'K' value not more than 0.028 Kcal/degC for underdeck insulation .	Sqm.	1000			
				<b>Sub-Total 'C' Rs. :</b>		
	<b><u>Part 'D' : Electrical Works</u></b>					
1	<b><u>Electrical Control Panel</u></b>					
	Supplying, installation, testing and commissioning of cubical type main MV panel board suitable for 3 phaes, 415 V, 50Hz and of 35 MVA rupturing capacity at 415 volts, fabricated from minimum 2mm thick CRCA sheet powder coated through seven tank process facilitiy for prickling and degreasing complete with following mountings, interconnections etc as requied (Main Electric Panel)- BMS Compatible					
	<b><u>Main A.C. Panel-P1</u></b>					
1.1	<b><u>Incomer</u></b>					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.1.1	2 No. 1250 Amps EDO 415V ACB TP+NL 50 KA incoming drawout type (Atleast one incomer dedicated for emergency/D.G set)					
1.1.2	1 No. 2500 Amps aluminium conductor bus bar duly sleeved					
1.1.3	1 No. 2500 Amps bus bar coupler.					
1.1.4	1 No. Ammeter with ASS & CTs.					
1.1.5	1 No. voltmeter with VSS.					
1.1.6	3 Nos. phase indicating lamps					
1.2	<b>Outgoing</b>					
1.2.1	3 No. 800 Amps 35 KA TP+NL ACB outgoing for 300 TR Capacity chillers.					
1.2.2	4 No. 63 Amps MCCB TP+NL 25 KA outgoing for condenser water pumps with 15 KW motor (1 standby)					
1.2.3	4 Nos. 40 Amps MCB TP+NL 10 KA outgoing for primary chilled water pumps with 7.5 KW motor. (1 standby)					
1.2.4	3 Nos. 100 Amps MCCB TP+NL 25 KA outgoing for secondary chilled water pumps with 18.5 KW motor.(1 standby)					
1.2.5	2 Nos. 40 Amps MCB TP+NL 15 KA outgoing for secondary chilled water pumps with 7.5 KW motor.(1 standby)					
1.2.6	3 Nos. 63 Amps MCCB TP+NL 25 KA outgoing for 375 TR cooling tower with 15 KW motor					
1.2.7	1 No. 40 Amps MCB TP+NL 15 KA outgoing for plant room air washer with 7.5 KW motor					
1.2.8	2 Nos. 16 Amps MCB TP+NL 10 KA outgoing for plant room axial flow fans					

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1.2.9	1 No. 63 Amps MCCB TP+NL outgoing for spare					
1.2.10	4 Nos. automatic type star delta starter for cond. water pumps (15 KW) (1 stand by)					
1.2.11	4 Nos. Star Delta starter for 7.5 KW motor of primary chilled water pumps (1 standby)					
1.2.12	3 Nos. star delta starter for 15 KW motor of cooling tower 375 TR.					
1.2.13	1 Nos. star delta starter for 7.5 KW motor of air washer.					
1.2.14	2 Nos. DOL starter for 1.1 KW motor of axial fans					
1.3	<b>All starter shall have following accessories :</b>					
1.3.1	1 No. overload relay					
1.3.2	1 No. Ammeter with ASS & CTs.					
1.3.3	1 No. single phase preventer MPRD-2 type					
1.3.4	2 Nos. ON/OFF indicating lights					
1.3.5	2 Nos. ON/OFF push buttons	Set	1			
2	<b><u>Sub Panel</u></b>					
2.1	Supplying, installation, testing and commissioning of MV panel board of cubical type, compartmentalised design fabricated from 2.0 mm thick CRCA sheet having necessary cable alleys, powder coated through seven-tank process facility for pricking and degreasing, including connections and inter connections as per specifications complete with following accessories as required ( supply panels in each AHU room) (Note: Power supply up to the each sub panel shall be in the scope of client/other agencies )					
2.2	<b><u>Panel - P2</u></b>					



Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
	<b><u>OUTGOING</u></b>					
2.2.1	1 No. 16 Amps MCB 10 KA for 2.2/3.7 KW motor					
2.2.2	1 No. DOL Starter					
2.2.3	1 No. single phase preventer MPRD-2 type					
2.2.4	1 No. ammeter					
2.2.5	2 Nos indicating lights					
2.2.6	2 Nos. Push buttons	Sets	40			
2.3	<b><u>Panel - P3</u></b>					
	<b><u>OUTGOING</u></b>					
2.3.1	1 No. 32 Amps MCB 10 KA for 5.5 KW motor					
2.3.2	1 No. DOL Starter					
2.3.3	1 No. single phase preventer MPRD-2 type					
2.3.4	1 No. ammeter					
2.3.5	2 Nos indicating lights					
2.3.6	2 Nos. Push buttons	Sets	10			
2.4	<b><u>Panel - P4</u></b>					
	<b><u>OUTGOING</u></b>					
2.4.1	1 No. 40 Amps MCB 10 KA for 7.5/9.3 KW motor					
2.4.2	1 No. Star Delta Starter					
2.4.3	1 No. single phase preventer MPRD-2 type					
2.4.4	1 No. ammeter					
2.4.5	2 Nos indicating lights					
2.4.6	2 Nos. Push buttons	Sets	11			
2.5	<b><u>Panel - P5</u></b>					
	<b><u>OUTGOING</u></b>					
2.5.1	1 No. 100 Amps MCCB 25 KA for 11/15/18.5/22 KW motor					
2.5.2	1 No. Star Delta Starter					
2.5.3	1 No. single phase preventer MPRD-2 type					
2.5.4	1 No. ammeter					
2.5.5	2 Nos indicating lights					
2.5.6	2 Nos. Push buttons	Sets	2			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
3	<b><u>Weather Proof isolators for cooling towers.</u></b>					
	Supply, installation, testing and commissioning of out door weather proof switch box of continuous welded construction, fabricated out of 2 mm thick G.I. sheet complete with water tight gasket with front openable and lockable door including earthing, painting, glands, danger boards etc. suitable for mounting on wall with M.S. angle iron frame of size 40x40x6 mm consisting of relevant I.S. specifications and drawings.					
3.2.1	63 Amps TP+NL Isolator for cooling towers near cooling towers.	Set	3			
5.	<b><u>Earthing</u></b>					
5.1	Earthing with Copper Earth plate 600 mm x 600 mm x 6 mm thick including accessories and providing masonry enclosures with cover plate having locking arrangement and watering pipe etc.(but without charcole, cokeand salt complete as required.)	Set	2			
5.2	Extra for using charcole and salt for Copper plate earth electrode as required.	Set	2			
5.3	Providing and fixing 25 mm x 5 mm Copper strip in 40 mm dia GI pipe earth electrode as required.	Set	15			
5.4	Providing and fixing Copper Earth strip on walls/ trenches complete as per specification and as required.					
5.4.1	25 mm x 5 mm	Rm	200			
5.5	Providing and fixing earth wire along with cable complete as per specifications and as required.					
5.5.1	6 SWG	Rm	800			

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
6	<b>Electrical cable</b> Providing and fixing PVC insulated armoured aluminium conductor cables from main panel boards to various equipments through walls/ceiling with appropriate clamps and fixing arrangements, termination etc. as per specifications and drawings.					
6.1	3 1/2 Core - 150 mm <sup>2</sup>	RM	50			
6.2	3 1/2 Core - 120 mm <sup>2</sup>	RM	50			
6.3	3 Core - 10 mm <sup>2</sup>	RM	160			
6.4	3 Core - 6 mm <sup>2</sup>	RM	250			
6.5	3 Core - 4 mm <sup>2</sup>	RM	50			
6.6	3 Core - 2.5 mm <sup>2</sup>	RM	10			
7.	<b>Cable Tray</b> Fabricating and installing perforated MS cable trays including horizontal and vertical bends, reducers, tees cross members and other accessories as required and duly suspended from the ceiling with M.S. suspenders and including painting etc. as required.					
7.1	100 mm x 50 mm x 1.6 mm	Rm	200			
7.2	300 mm x 62.5 mm x 1.6 mm	Rm	40			
				<b>Sub-Total 'D' Rs. :</b>		
<b>Part 'E' : Operation and Maintenance</b>						

Item No	Description	Unit	Qty.	Rate(Rs.)	Rate in words(Rs.)	Amount(Rs.)
1	2	3	4	5	6	7
1	Operation and maintenance (routine and preventive) of the high side & low side of the air conditioning plant comprising of all the machinery, equipment installed in the AC plant room including cooling towers, exclusive of spare parts in <b>three shift of 8 hours each</b> per day for the defect liability period of one year as per maintenance schedule attached at Annexure "H". Plant shall however be operated for 8 months from March to October.	1 Job	1 Job			
2	Operation and maintenance (routine and preventive) and break down maintenance of high side & low side of the air conditioning plant comprising of all the machinery, equipment installed in the AC plant room including cooling towers in <b>three shift of 8 hours each</b> during five years subsequent to one year guarantee period as per maintenance schedule attached at Annexure "H". Plant shall however be operated for 8 months from March to October.					
2.1	1st year	1 Job	1 Job			
2.2	2nd year	1 Job	1 Job			
2.3	3rd year	1 Job	1 Job			
2.4	4th year	1 Job	1 Job			
2.5	5th year	1 Job	1 Job			
		<b>Sub-Total 'E' Rs. :</b>				

**Construction of Hospital Buildings, Academic Block & Student's Hostel with Associated Services under phase-1 for Comprehensive Redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals (LHMC), New Delhi-110001**

**SUMMARY**

**Rupees**

**PART-A**

**1. Cost of Civil Works & Services.**

**CIVIL & RCC**

**PLUMBING**

**INTERNAL FIREFIGHTING**

**EXTERNAL RIREFIGHTING**

**2. Cost of Electrical Works.**

**INTERNAL ELECTRICA**

**EXTERNAL ELECTRICAL**

**3. Cost of HVAC Works**

**HOSPITAL & ONCOLOGY**

**ACADEMIC**

**Total Cost :-**

**Discount if any**

**GRAND TOTAL**

**( Signature of the Bidder )**

PART B					
BILL OF QUANTITY FOR OPERATION & COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT					
ITEM NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE	AMOUNT
	FOR DAY TO DAY OPERATION AND MAINTAINANCE WORKS			(IN FIGURE AND WORDS)	(IN FIGURE)
1	service charges for maintainance on day to day basis and operation of services of buildings under this package for Lady Hardinge Medical College & Associated Hospitals, comprising of activities as per scope of work enumerated in additional specific condition of contrat and specification for operation and comprehensive annual maintainance of services during defect liability period and first four years immidiately after DLP for the various items of works executed under the main contract sub heads CIVIL including PHE, FIRE FIGHTING. ELECTRICAL inclusive of ETP, STP, Solar Panels, DG sets, UPS, LIFTS etc., FDA, BMS, HVAC including repair and maintainance of various items of works so as to maintain the LHMC project in usable condition with least dirturbances to the occupant ancluding cost of supply of requisite manpower, tools and plants and accessories and to under take the repair work an day to day basis , as indicated in the schedule of activities with suggestive minimum man power and spares all complete				
a	CAMC as described above for the period defect liability period	per month	12		
b	CAMC as described above for the period during first year immidiately after DLP	per month	12		
c	CAMC as described above for the period during second year immidiately after DLP	per month	12		
d	CAMC as described above for the period during third year immidiately after DLP	per month	12		
e	CAMC as described above for the period during fourth year immidiately after DLP	per month	12		

ITEM NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE	AMOUNT
2	service charges for execution of maintainance activities of repair & periodic in nature for buildings under this package for Lady Hardinge Medical College & Associated Hospitals, comprising of activities as per scope of work enumerated in additional specific condition of contrat and specification for operation and comprehensive annual maintainance of services during defect liability period and first four years immidiately after DLP for the various items of works executed under the main contract sub heads CIVIL including PHE, FIRE FIGHTING. ELECTRICAL inclusive of ETP, STP, Solar Panel, DG sets, UPS, LIFTS etc., FDA, BMS, HVAC including preparing tthe area /items for repair and maintainance restore the sane in usable condition with least disturbance to the occupant, other then items covered under item 1a to 1e of part B and special items for which AMC for the period specifically arranged but including cost of arranging aall as required in CAMC complete as directed				
a	CAMC as described above for the period defect liability period	per month	12		
b	CAMC as described above for the period during first year immidiately after DLP	per month	12		
c	CAMC as described above for the period during second year immidiately after DLP	per month	12		
d	CAMC as described above for the period during third year immidiately after DLP	per month	12		
e	CAMC as described above for the period during fourth year immidiately after DLP	per month	12		
	Total cost of CMAC for five years in INR in part B				

**Construction of Hospital Buildings, Academic Block & Student's Hostel with Associated Services under phase-1 for Comprehensive Redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals (LHMC), New Delhi-110001**

**FINAL SUMMARY WITH OPERATION & MAINTENANCE**

**Rupees**

**PART-A**

- 1. Cost of Civil Works & Services.**
  
- 2. Cost of Electrical Works.**
  
- 4. Cost of HVAC Works**

**PART-B**

- 5. Cost of Operation & Comprehensive Maintenance of Services for 5 Years**

**Total Cost :-**

**Discount if any**

**GRAND TOTAL**

**( Signature of the Bidder )**