

HLL MEDIPARK LIMITED (HML)
(Subsidiary of HLL Lifecare Ltd., A Govt. of India Enterprise)

Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu.

Tender No. HML / INFRA /02/18 dated 28.02.2018

BOOK – 4

Bill of Quantities



HLL Medipark Limited (HML)
(A Govt of India Enterprise),
2nd Floor, HLL Bhavan,
No:26/4, Tambaram – Velachery Road,
Pallikaranai, Chennai-600100.

HLL MEDI PARK LTD			
Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu			
SUMMARY OF COSTING			
S.No	Description of Item	Amount in Figures (In Rs.)	Amount in Words
1	EMI/EMC LAB		
2	ADMINISTRATIVE/BUSINESS CENTRE AND SKILL DEVELOPMENT/INCUBATION CENTRE		
	GRAND TOTAL		

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu			
SUMMARY OF COSTING (EMI/EMC LAB)			
Bill No	Description of Item	Amount in Figures (In Rs.)	Amount in Words
1	Civil Works for EMI/EMC Lab		
2	External works for EMI/EMC Lab		
3	Plumbing for EMI/EMC Lab		
4	Electrical & ELV Works for EMI/EMC Lab		
5	HVAC for EMI/EMC Lab		
6	Fire fighting work & Fire alarm system for EMI/EMC Lab		
	GRAND TOTAL FOR EMI/EMC LAB:		

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.01 - Civil works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I	STURCTURAL WORKS					
A	EXCAVATION					
1	Earthwork & Filling					
a)	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	Cum	798.47			
2	Filling in foundation with soil obtained from excavation, in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	581.47			
3	Quarry Dust Filling					
a)	Filling in foundation with Quarry dust in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	80.81			
4	Treatment of soil under floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor. With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	Sqm	776.90			
B	CONCRETE					
	All CC/RCC works shall be in strict conformity NBC 2007-SP7 and specification appended herewith. Unless otherwise specified all items of RCC are to be of RMC as per the grade mentioned in the respective items.					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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	a) The rates to include of dewatering, Ready Mix Concrete, hoisting by manual labour or pumping by means of mechanised equipment. Compaction by rodding, tamping, vibrating by an approved mechanical vibrator etc., protecting, curing including hacking, roughening of concrete surface for receiving plaster or any other finish including costs of all tests on all materials and concrete as and when directed by the owner/ Engineering consultant/ consultant.					
	b) The rate for CC/RCC work shall include for forming projections, sinking of floor in toilets wherever directed, forming openings or niches, providing dowel bars and leaving pockets for fixing holdfast of door frames and frames of partition and also co-ordinating with other agencies for laying conduits, boxes, pipes, cutouts. clamps curing etc., as directed at site.					
	c) The suspended beams may have cut off 1m x 0.3m approx. for providing AC ducts wherever necessary as directed The concrete quantity will be deducted according to the sizes of cut off needed at site. d) The rates quoted shall include forming construction joints dummy/ construction joints, neoprene as specified / directed by Engineering consultant/ Owner. e) Formwork shall be paid separately unless otherwise specified. Reinforcing steel shall be paid separately unless otherwise specified. f) No finishing items are to be considered in quoting the rates of RCC items unless otherwise specified.					
1	PCC - M10 or 1:4:8					
1.1	Footing	Cum	43.18			
1.2	Flooring	Cum	38.85			

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				In Figures	In Words	
2	RCC - M35					
2.1	Footing	Cum	96.36			
2.2	Pedastal	Cum	5.01			
2.3	Column					
a	In Foundations	Cum	30.61			
b	In Ground floor	Cum	44.72			
c	In First floor	Cum	40.00			
d	In Terrace floor	Cum	2.66			
2.4	Plinth Beam	Cum	35.53			
2.5	Grade slab	Cum	77.69			
2.6	Roof beam					
a	Ground floor	Cum	56.51			
b	First floor	Cum	49.28			
2.7	Roof Slab					
a	Ground floor	Cum	119.32			
b	First floor	Cum	84.60			
2.8	Lintel	Cum	3.00			
2.9	Staircase	Cum	9.50			
3.0	OHT & Head room	Cum	15.92			
C	REINFORCEMENT WORKS					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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	Supply, straighten, cut, bend to shape, fabricate, fix and tie in position Reinforcement steel (TMT Bars) of Fe500 grade in all rcc works. Rates to include Supply, testing, tying with 18 gauge MS wire (Double strand) (actual weight (Length) laid in position will be measured and rate to include for all cuts and wastes) including cost of binding wire & cover blocks, lifting, scaffolding etc.in all floors.					
	Note : Unless noted otherwise the measurements in accordance with IS 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorised laps and splices, couplers of any dia, Chairs of any shape will be measured seperatly. Rate should include Decoiling, Spacer bar of any shape & profile, cover block, wastage and binding wire, lead, lift, placing at all levels and as directed.					
1	All Steel bar reinforcement should be in lengths not exceeding 12 meters unless otherwise stated.	MT	53.77			
D	FORMWORK					
	Providing, fabricating and erecting form work at all levels and places wherever needed/specified as per drawing using 12mm thick Commerical Plywood, marine resistant waterproof ply with adjustable steel props of acceptable Staging system and with sufficient bracing as approved by consultant. Cost to include designing of proper form work and staging system to suit the requirements,Submission of design calculations and shop drawings for approval,sealing the joints with heavy duty brown self adhesive tape, aligning to line and levels including M.S. Ties, PVC Spacer, Providing openings/ cutouts/ pockets, applying deshuttering chemical, Deshuttering as approved by the consultant etc., complete at all levels up to 5 mts.					
1	PCC - M10					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.1	Footing	Sqm	129.87			
2	RCC - M35					
2.1	Footing	Sqm	197.92			
2.2	Pedastal	Sqm	28.12			
2.3	Column					
a	In Foundations	Sqm	294.53			
b	In Ground floor	Sqm	428.75			
c	In First floor	Sqm	375.70			
d	In Terrace floor	Sqm	31.17			
2.4	Plinth Beam	Sqm	308.90			
2.6	Roof beam					
a	Ground floor	Sqm	476.39			
b	First floor	Sqm	349.70			
2.7	Roof Slab					
a	Ground floor	Sqm	632.13			
b	First floor	Sqm	255.00			
c	First floor (Double Height - 8.0 m)	Sqm	215.00			
2.8	Lintel	Sqm	35.00			
2.9	Staircase	Sqm	42.19			
3.0	OHT & Head room	Sqm	143.15			

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F	WATERPROOFING					
	TOILET					
1	Providing and Laying of Chowgule Acryflex 2K Strong/fosroc or equivalent, a 2 Component Cementitious Elastomeric water proofing system. The waterproofing system is brush applied in 2 coats on pre-dampened surface. The scope of work includes treatment of all cold-joint, construction-joints, separation joint and honeycomb areas, which will be built up with High Strength Polymer Modified Mortar to achieve an even and uninterrupted waterproofing application.The Rates Quoted are for Plan Areas Only. Laying of Protection in CM 1:4 of thickness 25mm for floor, 20mm for walls till floor level and 18mm till 300mm above floor level admixed with Chowgule Integ 200, an IWC Complying to IS 2645:1975 as per manufacturer's specification approved by consultants. Note: The Rates Quoted are for Plan areas only.	Sqm	64.72			
	TERRACE					
2	Providing and Laying of Chowgule Acryflex 2K Strong/fosroc or equivalent , a 2 Component Cementitious Elastomeric water proofing system. The waterproofing system is brush applied in 2 coats on pre-dampened surface @ 2.00 Kgs/Sqm. The scope of work includes treatment of all cold-joint, construction-joints, separation joint and honeycomb areas, which will be built up with High Strength Polymer Modified Mortar to achieve an even and uninterrupted waterproofing application.	Sqm	835.05			
II	ARCHITECTURAL WORKS					
A	MASONRY WORKS					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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1	Providing and constructing 200mm, 150mm thick Porotherm Thermo hollow brick with Thermal Insulation (400X200X200mm) (400X200X150mm) blocks from Wienerberger or equivalent as approved), masonry for external walls in cement mortar CM 1:4 (1 cement : 4 sand) mixed with approved non-shrinking compound as per manufacturer's instruction, including required formwork complete with raking out joints, curing, doing independent double legged scaffolding as per specifications etc. at heights, depths and leads as directed by PMC/Employer to his entire satisfaction. Blocks should be Listed by IGBC (Indian Green Building Council) in the 'Green Product Category' under-energy efficient product, material with recycled content & use of regional material and to withstand fire naturally as it fired at 1000 degrees and has a fire rating of F240 for 240minutes including painting the surface with Asian Tile Guard or Equivalent.					
1.1	200mm thick wall (All Levels)	Sqm	998.15			
1.2	150mm thick wall (All Levels)	Sqm	120.00			
1.3	100mm thick wall (All Levels)	Sqm	155.00			
2	Preparing the surface & plastering the Internal surface of walls at all heights with C.M 1:4, using sieved sand 12 to15 mm thk including the cost of scaffolding curing etc complete in Corridor.	Sqm	745.50			
3	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete, and providing internal pain on walls acrylic emulsion/distemper paint of approved brand and manufacture to give an even shade with 2 coats over of primer coat, as per the instruction of Engineer-in-Charge, complete finished item of work :	Sqm	745.50			
4	Supplying and fixing of 6mm thick Glass in the roof with necessary Aluminium Framing	Sqm	36.04			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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B	FLOORING					
1	Supplying & Laying flooring with Premium quality Vitrified floor tiles (seamless) of size 600 x 600 mm confirming to ISO 13006/EN 176 Group Bia with tech.specification as Mohs scratch hardness greater than 6, Water Absorption of 0.06%, Modulus of Rupture greater than 27 N/mm, Deep Abrasion resistant less than 204 mm cube, Surface flatness, Straightness of sides $\pm 0.25\%$, thickness $\pm 5\%$ of size of approved colour and size & thick as specified below, set in Laticrete adhesive L 290 / Bal endura and pointing with Laticrete make Latapoxy SP 100 of approved make, to matching colour shade as per Manufacturer's Specification and as directed. Rate shall include of polymer epoxy grout, wastages, for preparation of base surface, cleaning, acid wash, and finished surface, protection with Gypsum / Pop layer over Plastic sheet and removing the same before handing over, work at all levels and as directed. Rate shall be inclusive of forming pattern as shown in dwg and wastages etc; complete. (Basic rate Rs65/Sft)	Sqm	225.00			
2	Providing and laying Granite floor of 18mm thick (+/-) 1mm gang saw cut mirror polished premoulded and prepolished) machine cut for flooring 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. (Basic Price: 180/Sft)	Sqm	313.75			
3	Screed - 1:3:6 50mm thick					

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a)	Providing & Laying Screed concrete 1:3:6 flooring of 75mm Average Thick with 12 mm down aggregate including placing , compaction , curing and finished with machine trowel finish (Rough/Smooth) only complete. Tolerance of +/- 3mm flatness will be applicable. Rate is inclusive of Providing Isolation, Construction joint, Check joint and curing the surface.	Sqm	200.00			
4	Providing and fixing 1st quality Ceramic Glazed floor tiles of size 300 x300 mm confirming to IS:15622(thickness to be specified by the manufacturer), of approved make, in all colours such as white ,ivory,gre. fume red brown laid over 20 mm thick bed of cement mortar 1:4 , including pointing in white cement mixed with pigment of matching shade complete.	Sqm	50.00			
C	WALL DADOING					
1	Providing and laying Ceramic tiles (300 x 450) in cladding/ dado/ jamb/ soffit/ cill of uniform thickness, size, shade and pattern as approved by Engineer's Incharge laid with rich cement size, shade and pattern as approved by Engineer's Incharge laid with rich cement slurry over a bedding plaster of 6mm (avg.) thick cement mortar 1:3 (1 cement : 3 fine sand) including the cost of 12mm average thick rough base plaster of mix 1:3 (1 cement : 3 coarse sand), grouted with polymer based (acrylic) tile grouted (Bal grout) of matching shade of tile, cutting of tiles, scaffolding, curing etc. complete in all respects as per drawing. (Basic Price Rs.45/Sft)	Sqm	236.95			
E	JOINERIES					
1	WOODEN DOOR					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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	Providing and fixing 32mm thick Wooden flush door with style, rail & lipping covered on both sides by plywood with 100mm x 57mm thick Teakwood. frame, with coal tar applied on hidden face of frame (encased in wall) including all oxidised brass fixtures, fastenings, making chases in masonry or drilling screws Rawl Plug in concrete surfaces and making them good after fixing the frames by means of M.S.hold-fasts of 40mm x 3 thick x 150mm long in situ PCC M15 of block size 150 x 200 x thickness of masonry only. Rate is inclusive of 1mm thick laminate finish on both sides 6mm thick Vision panel Complete as per the drawings, specifications and as directed by the Architect (All the doors shall be of the type which shall give minimum air leakage). Rate is inclusive of Iron Mongeries, Hydraulic door closer , Mortice Lock & Door Stopper					
a)	MD1 - 1750 x 2135	Nos	1.00			
b)	MD3 - 1800 x 2135	Nos	3.00			
c)	MD4 - 2500 x 2135	Nos	1.00			
d)	WD1 - 1000 x 2135	Nos	7.00			
e)	WD2 - 915 x 2135	Nos	6.00			
f)	WD3 - 760 x 2315	Nos	5.00			
2	Physically Challenged Sliding Door					
	Supplying and fixing of 18mm thick laminated partical board fixed with MS railing bracket at top Hung with necessary fittings to finish the job					
a)	SD - 900 x 2240	Nos	1.00			
3	STRUCTURAL GLAZING -STICK SYSTEM					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
a)	Providing and fixing Stick System of Structural Glazing using aluminium extruded heavy duty special aluminium colour anodized /powder coated section. Framework to be made out of Verticals and Horizontals of size 65x55x2mm (1.45 kg/mt) to be fabricated and assembled to form a grid as required at site. The complete system should be designed to withstand wind pressure of 150 kg/sqmt. M.S brackets (galvanized) as required to be marked as per grid design and fixed to building structure with M.S galvanised base plate and Fischer Hammerfix fastners. The framework to be fixed to base plates with SS screws. 6mm thick STB 120 (Titanium Blue) glass to be fixed over the framework from outside with Structural Sealant (Dow Corning 795). Horizontal and Vertical gaps between two glass to and between glass and structure to be filled with Silicon weather sealant (Dow Corning 789) to make it complete airtight	Sqm	237.88			
4	FIXED LOUVRES					
a)	Providing and fixing Fixed Louvres using aluminium extruded aluminium anodized powder coated section. Outer frame to be made out of 63x38x2mm aluminium section assembled with necessary cleats and Bolts/nuts to required size. Louvre blades (4") made from aluminium 1/2" U channel at a spacing of 3" to be fixed into outer frames. 4mm pin head glass cut and edge polished to required size to be fixed into channel with suitable EPDM gaskets.	Sqm	4.56			

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5	FIXED GLASS / PARTITIONS					
a)	Providing and fixing Frameless Glass Partitions with 12mm Clear Toughened glass for maximum height of of 3400mm. Glass shall be supported at top and bottom with aluminium 'U' Channel of size: 25x40mm and suitable PVC/rubber wedges. Channel to be fixed at bottom into groove cut in flooring with Fischer Hammer fix fastners. Channel at top to fixed into support frame using aluminium box section of size: 100x45x2mm using clamps, anchor bolts and Fischer Hammerfix fastners. Weather sealent to be applied between channel and glass and between glass joints to form a complete glass partition	Sqm	42.12			
6	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	Kg	50.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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F	GYPSUM WORKS					
1	Drywall Partition					
	Providing and fixing partitions upto ceiling height consisting of GI frame and required board including providing and fixing of frame work of special section power pressed/ role formed GI sheet with Zinc Coating of grade 175 consisting of floor and cieling channel 50 mm wide having equal flanges of 32 mm and 0.50 mm thick fixed to the floor and cieling at the spacing of 610 mm centre to centre with dash fastner of 12.50 mm dia 40mm length and the studs 48 mm wide having one flange of 34 mm and another flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and cieling channel and placed at a spacing of 610 mm c/c by 6 mm dia bolts and nuts at both ends of partition fixed flushed to wall with rawl plugs at spacing of 450 mm c/c and fixing of boards to either side of frame work by 25 mm , drive all screws on studs, floor and cieling channels at the spacing of 300 mm c/c, including jointing and finishing to a flush finish with recomended jointing compound, jointing tape, joint finisher and two coats of primer suitable for board as per manufacturer specification and direction of Engineer-In-Charge all complete. 100 mm overall thickness with Gysum board conforming to IS 2095 Part 1					
a)	Normal gypsum 12mm 2 layers(both side)	Sqm	35.00			

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2	False ceiling					
a)	Providing and fixing Gypsum False Ceiling of DIAMOND FRAMES/Board LAFARGE, USG & India Gypsum make which includes G.I. Perimeter Channels of size 0.55mm thick (having One Flange of 20mm and another flange of 30mm and a web of 27mm) along with perimeter of ceiling, screw fixed to brick wall / partition with the help of Nylon sleeves and screws at 610mm centers. Then suspending G.I. intermediate channels of size 45mm (0.9mm thick with two flanges of 15mm each) from the soffit at 1220mm centers with ceiling angle of width 25mm X 10mm X 0.55mm thick fixed to soffit with G.I. cleat and steel expansion fasteners. Ceiling section of 0.55mm thick having knurled web of 51.5mm and two flanges of 26mm each with lips of 10.5mm are then fixed to the intermediate channel with the help of connecting clips and in direction perpendicular to the intermediate channel at 457 mm centers.	Sqm	390.21			
	Grand Total (Bill No.01):					

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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I	SITE DEVELOPMENT					
1	Supplying and Filling with approved good quality gravel (within the park boundary shown by the client) in Plinth area development etc. wherever specified in layers, not exceeding 200mm thick including breaking clods, watering, compacting each layer with 10MT vibratory Roller compactor and in inaccessible places with Plate compactor / wooden / steel rammers to achieve 90 to 95% (Ref.QAP) proctor density at optimum moisture content, all leads and lifts, bailing/pumping out of water to keep site dry while back filling; costs includes conveyance of all materials labour, machinery etc. complete as directed by Owner/Consultant.	Cum	749.70			
2	Road work					
a)	Supplying and fixing Interlocking Blocks against available edge restranits 80mm thick of approved Design and pattern of Strength 25 N/Sq.m, with minimum cement content as applicable to M 25 grade concrete as per IS 456 - 2000, manufactured by mechanical or hydraulic machine using VIBRO-COMPACTION. Process and laid over 50mm thick laying course (bedding) River sand well compacted by plate Compactor with a joint width of 2mm to 5mm including filling of all joints with. River sand and compacting the paved surface with plate compactor two or three times until all the Unit-to-Unit joints are completelt filled with River sand and trimming the edges neatly including all labour charges and plate compactor charges etc., complete	Sqm	1,314.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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b)	Supplying and fixing Interlocking Blocks against available edge restranits 60mm thick of approved Design and pattern of Strength 25 N/Sq.m, with minimum cement content as applicable to M 25 grade concrete as per IS 456 - 2000, manufactured by mechanical or hydraulic machine using VIBRO-COMPACTION. Process and laid over 50mm thick laying course (bedding) River sand well compacted by plate Compactor with a joint width of 2mm to 5mm including filling of all joints with. River sand and compacting the paved surface with plate compactor two or three times until all the Unit-to-Unit joints are completelt filled with River sand and trimming the edges neatly including all labour charges and plate compactor charges etc., complete	Sqm	1,314.00			
c)	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density, as specified in the drawings, complete as per specifications and directions of the Engineer. (150mm thick)	Cum	394.20			
4	Kerb Stone					
a)	Providing and laying at or near ground level factory made kerb stone of M25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making jointswith or without grooves (thickness of joints except at sharp curve shall not be more than 5 mm) including making drainage opening wherever required complete etc. Precast CC kerb stone shall be approved by Client/ Architect. Rate is inclusive of 2 Coats exterior emulsion	Rmt	250			

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
II	SEPTIC TANK					
A	Earthwork & Filling					
1	Excavation and filling in all kinds of soils including in weathered soft rock/disintegrated/hard rock and any existing foundation for pits, trenches, by mechanical, wedging, chiselling or by chemical compound, as well as manual for the following depths below average ground level including protecting the sides of foundation, levelling the bottom of excavation including dewatering, consolidation and carting away surplus earth and stocking within the site for refilling as directed by Owner/Consultant	Cum	68.06			
2	Quarry Dust Filling					
	Filling in foundation with Quarry dust in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	4.08			
B	CONCRETE					
	All CC/RCC works shall be in strict conformity NBC 2007-SP7 and specification appended herewith.					
	Unless otherwise specified all items of RCC are to be of RMC as per the grade mentioned in the respective items. a) The rates to include of dewatering, Ready Mix Concrete, hoisting by manual labour or pumping by means of mechanised equipment. Compaction by rodding, tamping, vibrating by an approved mechanical vibrator etc., protecting, curing including hacking, roughening of concrete surface for receiving plaster or any other finish including costs of all tests on all materials and concrete as and when directed by the owner/ Engineering consultant/ consultant.					

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	b) The rate for CC/RCC work shall include for forming projections, sinking of floor in toilets wherever directed, forming openings or niches, providing dowel bars and leaving pockets for fixing holdfast of door frames and frames of partition and also co-ordinating with other agencies for laying conduits, boxes, pipes, cutouts, clamps curing etc., as directed at site.					
	c) The suspended beams may have cut off 1m x 0.3m approx. for providing AC ducts wherever necessary as directed The concrete quantity will be deducted according to the sizes of cut off needed at site. d) The rates quoted shall include forming construction joints dummy/ construction joints, neoprene as specified / directed by Engineering consultant/ Owner. e) Formwork shall be paid separately unless otherwise specified. Reinforcing steel shall be paid separately unless otherwise specified. f) No finishing items are to be considered in quoting the rates of RCC items unless otherwise specified.					
1	PCC - M10					
1.1	Footing	Cum	2.72			
2	RCC - M35					
2.1	Footing	Cum	8.17			
2.2	Pedestal	Cum	1.47			
2.3	Walls	Cum	10.64			
2.4	Cover slab	Cum	5.40			
C	REINFORCEMENT WORKS					

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Supply, straighten, cut, bend to shape, fabricate, fix and tie in position Reinforcement steel (TMT Bars) of Fe500 grade in all rcc works. Rates to include Supply, testing, tying with 18 gauge MS wire (Double strand) (actual weight (Length) laid in position will be measured and rate to include for all cuts and wastes) including cost of binding wire & cover blocks, lifting, scaffolding etc.in all floors.					
	Note : Unless noted otherwise the measurements in accordance with IS 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorised laps and splices, couplers of any dia, Chairs of any shape will be measured seperatly. Rate should include Decoiling, Spacer bar of any shape & profile, cover block, wastage and binding wire, lead, lift, placing at all levels and as directed.					
1	All Steel bar reinforcement should be in lengths not exceeding 12 meters unless otherwise stated.	MT	3.14			
D	FORMWORK					
	Providing, fabricating and erecting form work at all levels and places wherever needed/specified as per drawing using 12mm thick Commerical Plywood, marine resistant waterproof ply with adjustable steel props of acceptable Staging system and with sufficient bracing as approved by consultant. Cost to include designing of proper form work and staging system to suit the requirements,Submission of design calculations and shop drawings for approval,sealing the joints with heavy duty brown self adhesive tape, aligning to line and levels including M.S. Ties, PVC Spacer, Providing openings/ cutouts/ pockets, applying deshuttering chemical, Deshuttering as approved by the consultant etc., complete at all levels up to 5 mts.					
1	Footing	Sqm	4.36			

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2	Pedastal	Sqm	6.54			
3	Walls	Sqm	106.38			
4	Cover slab	Sqm	27.00			
III	UNDER GROUND SUMP					
A	Earthwork & Filling					
1	Excavation and filling in all kinds of soils including in weathered soft rock/disintegrated/hard rock and any existing foundation for pits, trenches, by mechanical, wedging, chiselling or by chemical compound, as well as manual for the following depths below average ground level including protecting the sides of foundation, levelling the bottom of excavation including dewatering, consolidation and carting away surplus earth and stocking within the site for refilling as directed by Owner/Consultant	Cum	28.78			
2	Quarry Dust Filling					
	Filling in foundation with Quarry dust in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	1.98			
B	CONCRETE					
	All CC/RCC works shall be in strict conformity NBC 2007-SP7 and specification appended herewith.					

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Unless otherwise specified all items of RCC are to be of RMC as per the grade mentioned in the respective items. a) The rates to include of dewatering, Ready Mix Concrete, hoisting by manual labour or pumping by means of mechanised equipment. Compaction by rodding, tamping, vibrating by an approved mechanical vibrator etc., protecting, curing including hacking, roughening of concrete surface for receiving plaster or any other finish including costs of all tests on all materials and concrete as and when directed by the owner/ Engineering consultant/ consultant.					
	b) The rate for CC/RCC work shall include for forming projections, sinking of floor in toilets wherever directed, forming openings or niches, providing dowel bars and leaving pockets for fixing holdfast of door frames and frames of partition and also co-ordinating with other agencies for laying conduits, boxes, pipes, cutouts. clamps curing etc., as directed at site.					
	c) The suspended beams may have cut off 1m x 0.3m approx. for providing AC ducts wherever necessary as directed The concrete quantity will be deducted according to the sizes of cut off needed at site. d) The rates quoted shall include forming construction joints dummy/ construction joints, neoprene as specified / directed by Engineering consultant/ Owner. e) Formwork shall be paid separately unless otherwise specified. Reinforcing steel shall be paid separately unless otherwise specified. f) No finishing items are to be considered in quoting the rates of RCC items unless otherwise specified.					
1	PCC - M10					
1.1	Raft	Cum	1.32			
2	RCC - M35					

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.1	Raft	Cum	3.96			
2.2	Walls	Cum	5.94			
2.4	Cover slab	Cum	1.98			
C	REINFORCEMENT WORKS					
	Supply, straighten, cut, bend to shape, fabricate, fix and tie in position Reinforcement steel (TMT Bars) of Fe500 grade in all rcc works. Rates to include Supply, testing, tying with 18 gauge MS wire (Double strand) (actual weight (Length) laid in position will be measured and rate to include for all cuts and wastes) including cost of binding wire & cover blocks, lifting, scaffolding etc.in all floors.					
	Note : Unless noted otherwise the measurements in accordance with IS 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorised laps and splices, couplers of any dia, Chairs of any shape will be measured seperatly. Rate should include Decoiling, Spacer bar of any shape & profile, cover block, wastage and binding wire, lead, lift, placing at all levels and as directed.					
1	All Steel bar reinforcement should be in lengths not exceeding 12 meters unless otherwise stated.	MT	2.00			

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Bill No.02 - External works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
D	FORMWORK					
	Providing, fabricating and erecting form work at all levels and places wherever needed/specified as per drawing using 12mm thick Commerical Plywood, marine resistant waterproof ply with adjustable steel props of acceptable Staging system and with sufficient bracing as approved by consultant. Cost to include designing of proper form work and staging system to suit the requirements,Submission of design calculations and shop drawings for approval,sealing the joints with heavy duty brown self adhesive tape, aligning to line and levels including M.S. Ties, PVC Spacer, Providing openings/ cutouts/ pockets, applying deshuttering chemical, Deshuttering as approved by the consultant etc., complete at all levels up to 5 mts.					
1	PCC	Sqm	1.50			
2	Raft	Sqm	4.50			
3	Walls	Sqm	63.00			
4	Cover slab	Sqm	13.50			
E	TILING					
1	Supplying & Laying flooring with Premium quality Vitrified floor tiles (seamless) of size 600 x 600 mm confirming to ISO 13006/EN 176 Group Bia with tech.specification as Mohs scratch hardness greater than 6,Water Absorption of 0.06%, Modulus of Rupture greater than 27 N/mm, Deep Abrasion resistant less than 204 mm cube, Surface flatness, Straightness of sides ± 0.25%, thickness ± 5% of size of approved colour and size & thick as specified below, set in Laticrete adhesive L 290 / Bal endura and pointing with Laticrete make Latapoxy SP 100 of approved make, to matching colour shade as per Manufacturer's Specification and as directed. Rate shall include of polymer epoxy grout, wastages, for preparation of base surface, cleaning, acid wash, and finished surface, protection with Gypsum / Pop layer over Plastic sheet and removing the same before handing over,work at all levels and as directed. Rate shall be inclusive of forming pattern as shown in dwg and wastages etc; complete. (Basic rate Rs45/Sft)	Sqm	43.50			
Grand Total (Bill No.02):						

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
A	Part A - Sanitary Fixtures					
1	Supply & installation of Kohler make or approved make Wall Hung taller type European water closet for specially abled person with Plastic Cistern with elbow operated knob, foldable hinged arm, grab bar, down rails & C.P. bolts, nuts, Bakelite toilet seat and cover complete with all accessories. Including cutting & making good the walls & floors wherever required.	Nos.	6.00			
	EWC - SKU Code : 18131IN-S-0-Patio Wall Hung with Sc Seat - Kohler or equivalent type as per the instruction of Engineer-In-Charge.					
	Double Flush Knob Operated - SKU Code : 4177IN-M-Cp - Kohler or equivalent type as per the instruction of Engineer-In-Charge.					
	Cistern Tank - 3/6 Litres -SKU Code: 77027IN-M-NA Insta Flush Mech- Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above closet complete with supply of PVC / Brass Pan connectors, & necessary fasteners, fixing of the angle cock & CP brass connection pipe to the cistern. Providing water & Soil connections to the closet, together with cutting and making good the walls and floors wherever required.					

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2	Supply of Kohler make - Caxton Under Counter Wash basin of White color together with supply of Approved 'make basin pillar cock, C.P brass bottle trap, pipe to wall escutcheon plate, CP waste coupling and rubber adaptor for waste connection. Supply of 1 nos. approved make CP angle cock together with CP brass connection pipes to the basin.	Nos.	5.00			
	Under Counter Wash basin -Caxton - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Kumin Piller Tap - SKU Code: 99452IN-4-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Grid Drain With Over Flow Hole - SKU Code: F850015 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Standard P Trap - SKU Code: 7314IN-Cp - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above Half-Pedestal Wash basin (K-96050IN-0)with supply & fixing of specially fabricated MS brackets with adjustable screws and nuts to suit the wash basin, fixing of the angle cocks & CP brass connection pipes and giving connections to the Cold water pipes & wash basin, together with cutting and making good the walls and floors wherever required. (Fittings shall be of approved make & Finish)					
3	Supply of Health faucet along with wall fixing bracket, 1 m long flexible tube, and CP angle cock.	Nos.	6.00			
	Cuff Health Faucet - SKU Code: F98100IN -0 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above health faucet, wall hook and angle cock, including wall chasing, making good the same, complete.					
4	Supply & fixing of Lipka / chiily 127X127 mm SS floor square grating with removable plain round jali.	Nos.	7.00			
5	Supply & fixing of Lipka / chiily 127X127 mm SS floor Cleanout	Nos.	5.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
6	Concealed Stop Cock Extra Heavy body with adjustable wall flange size 20mm Concealed Stop cock - F850097- Hindware or equalent type as per the instruction of Engineer-In-Charge.	Nos.	3.00			
7	Concealed Stop Cock Extra Heavy body with adjustable wall flange size 25mm Concealed Stop cock	Nos.	3.00			
8	Supply & Fixing of superior quality of approved type design, Double coat hook with complete screw fitting. Cat No : F880004 - Hindware	Nos.	6.00			
9	Supply & Fixing of CP brass liquid soap dispenser with necessary fittings, etc., complete. Cat No : ASD 90W Askon or equalent type as per the instruction of Engineer-In-Charge.	Nos.	5.00			
10	Supply & Fixing of white color vitreous china Urinal of Size of approval make, complete with C.I. Bracket fixing to wall dado with required materials like teak wood plugs packing pieces, screw nails etc, C.P. Bottle trap approved make, sensor kit must with complete back boxes, C.P. Spreader, Pipe, C.P. Dome Coupling etc. complete, testing & commissioning the installation. All materials of approved make & model	Nos.	3.00			
	Urinal - Cat No: K-5017IN-ER-0 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Urinal Sensour - K-8791T-C01-CP Kohler or equalent type as per the instruction of Engineer-In-Charge.					
11	Supply and fixing of Urinal partition magnum of approved make for Urinal border with necessary supports, bolts, nuts, etc.,	Nos.	3.00			
12	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws (K-5630IN-CP, or equalent type as per the instruction of Engineer-In-Charge)	Nos.	7.00			
13	Providing and fixing CP brass Tissue holder roller in polished chrome of approved make complete with CP brackets fixed to wooden cleats with CP brass screws (K-5632IN-CP, or equalent type as per the instruction of Engineer-In-Charge)	Nos.	6.00			
14	Providing and fixing Bardon Hand dryer with CP brackets fixed to wooden cleats with CP brass screws (5486T-0P, or equalent type as per the instruction of Engineer-In-Charge)	Nos.	1.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
15	Supply & Fixing of single bowl sink with drain board drain points for connect the waste couplers, with necessary supports, brackets, bolts, nuts, at equal intervals, etc.,	Nos.	1.00			
B	Part B - Internal Drainage - Soil & Waste					
	Soil & Waste Buried in Sunken Floors & Above False Ceiling.					
16	Supply & Fixing of uPVC as per IS-4985/1968 with solvent 'weld type joints together uPVC pipe specials of approved make. The pipes shall be duly fixed at site, with necessary cutting & jointing of pipe with approved quality jointing, necessary bends, reducers, solvent. The pipes shall be fixed properly aligned with necessary bricks & mortar work. The scope of Work to include making necessary holes in the masonry walls etc., and making good the damaged portions with mortar filling with 1:4 mix. Before handing over, leak test shall be carried out and any defects found shall be rectified.					
a)	110 mm O.D pipe Type - B	RMT	48.00			
b)	75 mm O.D pipe Type - B	RMT	65.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Soil & Waste stacks in Shafts.					
17	Supply & Fixing of uPVC as per IS-13592-1992 with O' ring 'joints, SWR pipes with necessary reducers if required, together uPVC pipe specials of approved make. The pipes shall be duly fixed at site, with necessary cutting & jointing of pipe with approved quality jointing lubricant. The pipe shall be fixed properly aligned vertical with suitable MS pipe clamps. Work to include making necessary holes in the masonry walls etc.. and making good the damaged portions with mortar filling with 1:4 mix. Before handing over, leak test shall be carried out and any defects found shall be rectified. The work shall include supply and fixing of necessary angles/ channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	110 mm O.D pipe (SWR & UPVC) Type - B	RMT	50.00			
b)	75 mm O.D pipe (SWR & UPVC) Type - B	RMT	50.00			
	Internal Drain from Wash Basins					
18	Supply of rigid PVC pipes as per IS 4985, complete with necessary solvent cement joint fittings IS 7834 for drain piping between the bottle traps and up to the floor traps. Erection of the above pipe including cutting, jointing of the pipes with necessary fittings, erection of the pipes in wall chasing with necessary clamps and making good the chasings.					
a)	50 mm dia. 10 Kg class	RMT	38.00			
b)	40 mm dia. 10 Kg class	RMT	25.00			
c)	32 mm dia. 15 Kg class	RMT	50.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
19	Supply of uPVC pipes rain water down take pipes as per IS 13592-1992, with O' ring jointed ends and fittings. The scope shall include supply of necessary fittings. Fixing of the rain water downcomers, including cutting the pipes to size, reducers, jointing the pipes and fittings, erection of the pipes plumb in shafts and elsewhere, making end connections at both the gratings and gutters / channels at ground level etc., The work shall include supply and fixing of necessary angles/ channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	160 mm OD pipes-Type 'B'	RMT	83.00			
20	Supply and fixing of uPVC vent cowls with "O" ring joints, for Soil & Waste.					
a)	160 mm OD	Nos.	7.00			
C	Part C - Internal Water Supply.					
	Exposed Cold Water Pipes					
	Exposed Cold Water Pipes (in SHAFT)					
21	Supply and fixing of cPVC pipes make - Astral / Ajay complete with necessary solvent cement weldable fittings, confirming to ASTM F-441 for water supply piping in the vertical shafts. The pipes shall be erected plumb in the risers. Erection of the above pipe including cutting, jointing of pipes with necessary fittings, erection of the pipes plumb to vertical, clamping the pipes on to MS Hot dip galvanized clamps, pressure testing of pipes, complete.					
	The work shall include supply and fixing of necessary angles/channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	40 mm dia. SDR 11	RMT	46.00			
b)	32 mm dia. SDR 11	RMT	52.00			
c)	25 mm dia. SDR 11	RMT	40.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
d)	20 mm dia. SDR 11	RMT	35.00			
	Concealed Hot and Cold Water Pipes					
22	Supply and fixing of class 1 SDR 11 cPVC pipes as per ASTM D-24846 threaded end connections for faucets for water piping. The end connections shall be standard fittings from Astral only. Erection & laying of water piping complete with fixing of necessary solvent welded fittings clamping the same on to wall chasing pressure testing complete. The work shall also include chasing the walls wherever required for concealed piping and making good the same after laying the pipes.					
a)	25 mm dia.	RMT	61.00			
b)	20 mm dia.	RMT	186.00			
	Puddle flanges for Sump and OHT:-					
23	Providing and fixing GI. puddle flanges (IS; 1239) fabricated out of 6 mm thick M.S. plate of size 300 x 300mm plus dia of pipe of 750mm long pipe pieces fixed to RCC wall of water tanks. Including painting with two coats of primer complete as required. The entire fitting shall be hot dipped galvanized.					
a)	50 mm dia	Nos	1.00			
b)	40 mm dia	Nos	1.00			
c)	32 mm dia	Nos	5.00			
24	Supply & fixing of Audco / Equivalent butterfly valve (up to 150mm dia with hand lever operation & above with gear box operation. Tested to a pressure of 15 Kg/Sq.cm. Including rubber gasket, flanges, nuts, bolts, washers & painting complete as required.					
a)	50 mm dia	Nos.	2.00			
25	Supply & fixing of "RB" make automatic air release valve with 1/2 ball valve of RB / itap make.	Nos.	3.00			
	Part D - External Drainage					

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Soil, Waste Water Drainage.					
26	Supply & Fixing of Astral / Supreme make SWR pipes SN8 as per IS 15328 with solvent 'joints, together uPVC pipe specials of approved make. The pipes shall be duly laid at site, with necessary cutting & jointing of pipe with approved quality jointing lubricant. The pipes shall be fixed properly aligned and laid to slope. Before handing over, leak test shall be carried out and any defects found shall be rectified. Work shall also include necessary excavation and back filling 'with compaction etc., as required.					
a)	200 mm O.D pipe (UPVC) SN4	RMT	60.00			
b)	160 mm O.D pipe (UPVC) SN4	RMT	50.00			
c)	110 mm O.D pipe (SWR) Type B	RMT	25.00			
d)	75 mm O.D pipe (SWR) Type B	RMT	20.00			
27	Supply of Glazed stoneware gully trap of size 150 x 100 mm with 100 mm outlet, CI grating to suit the size of the gully mouth, CI cover & frame of 300 x 300 mm clear opening of 7 kg weight, complete. Laying in position the above glazed stone ware gully trap including embedding trap in cement concrete 1:3:6 and constructing chamber of size 300 x 300 mm inside clear in brick masonry, 15 mm thick plaster with cement mortar (1:3) on both internal and external surfaces, inside finished with floating coat of neat cement. Fixing C.I frame and cover 300 x 300 mmX7 kgs wt (clear opening), cover painted with 2 coats of anti-corrosive black bitumastic paint etc., complete. The work shall include necessary excavation and backfilling. (Air tight heavy duty covers for gully traps which falls in parking area)	Nos.	4.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
28	Construction of sewer chambers of required internal dimension of 600x600mm depth upto 0.8 Mtr depth with brick masonry in cement mortor 1:5 thickness of masonry 225 mm, 1:3:6 cement concrete foundation 150 mm thick over 150 mm sand bed, channelling in 1:2:4 cement concrete, plastering in 1:3 cement mortor for internal and external surface finished with floating coat of neat cement. Neco make Heavy duty DI manhole cover with hinged frame. fixed over 100 mm P.C.C. including painting of the frame, cover with 2 coats of anti- corrosive bitumastic paint over a coat of primer all as per specifications. The work shall include top slab of around 150mm concrete structure for the mentioned size & making arrangement for manhole cover seating, necessary exacavation and backfilling.	Nos.	3.00			
29	Construction of sewer chambers of required internal dimension of 600x750mm depth upto 1.0 Mtr depth with brick masonry in cement mortor 1:5 thickness of masonry 225 mm, 1:3:6 cement concrete foundation 150 mm thick over 150 mm sand bed, channelling in 1:2:4 cement concrete, plastering in 1:3 cement mortor for internal and external surface finished with floating coat of neat cement. Neco make Heavy duty DI manhole cover with hinged frame. fixed over 100 mm P.C.C. including painting of the frame, cover with 2 coats of anti- corrosive bitumastic paint over a coat of primer all as per specifications. The work shall include necessary exacavation and backfilling.	Nos.	4.00			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
30	Construction of Rain water chambers of required internal dimension of 750x750mm depth upto 1.0 Mtr depth with brick masonry in cement mortar 1:5 thickness of masonry 225 mm, 1:3:6 cement concrete foundation 150 mm thick over 150 mm sand bed, channelling in 1:2:4 cement concrete, plastering in 1:3 cement mortar for internal and external surface finished with floating coat of neat cement. Neco make Heavy duty DI manhole grating cover with hinged frame. fixed over 100 mm P.C.C. including painting of the frame, cover with 2 coats of anti- corrosive bitumastic paint over a coat of primer all as per specifications. The work shall include top slab of around 150mm concrete structure for the mentioned size & making arrangement for manhole cover seating, necessary excavation and backfilling.	Nos.	2.00			
	Distribution of STP to Gardening.					
31	Supply, installation, testing and commissioning of underground UPVC pipes make - Astral / Ajay complete with necessary solvent cement weldable fittings, pipes & fittings confirming to ASTM D 1785 & ASTM D 2466 for water supply piping in the below ground. Erection of the above pipe including cutting, jointing of pipes with necessary fittings, erection of the pipes plumb to vertical, clamping the pipes on to MS Hot dip galvanized clamps, pressure testing of pipes, complete. The pipes shall be laid buried Laying work to include excavating the necessary trenches, cutting and jointing and laying the pipes in the trenches. after laying and pressure testing of pipes, the excavated earth shall be back fill and compacted any excess shall be removed from site.					
a)	40 mm dia.	RMT	305.00			
b)	20 mm dia.	RMT	75.00			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Distribution of STP to OHT, UG sump to OHT					
32	Supply and fixing of cPVC pipes make - Astral / Ajay complete with necessary solvent cement weldable fittings, confirming to ASTM F-441 for water supply piping in the vertical shafts. The pipes shall be erected plumb in the risers. Erection of the above pipe including cutting, jointing of pipes with necessary fittings, erection of the pipes plumb to vertical, clamping the pipes on to MS Hot dip galvanized clamps, pressure testing of pipes, complete.. The pipes shall be laid buried Laying work to include excavating the necessary trenches, cutting and jointing and laying the pipes in the trenches. after laying and pressure testing of pipes, the excavated earth shall be back fill and compacted any excess shall be removed from site.					
a)	50 mm dia.	RMT	65.00			
b)	32 mm dia.	RMT	15.00			
c)	25 mm dia.	RMT	15.00			
33	Supply and installation of approved make, CI body submersible pump, Flow 15m ³ /hr (1W+1S), Head of 33Mtr. For domestic water transfer.	Set	1.00			
34	Supply and installation of required couplings, control panel, required wiring between panel and motors, required pump supports. Cabling between starter panel to the Pump, necessary NRVs, butterfly valves, provision for pulling & accessing the pump, etc	Set	1.00			
35	Supply and installation of approved make, submersible pump, Flow 9M ³ /hr (1W+1S), Head of 25Mtr. For Landscape water transfer.	Set	1.00			
36	Supply and installation of required couplings, control panel, required wiring between panel and motors, required pump supports. Cabling between starter panel to the Pump, necessary NRVs, butterfly valves, provision for pulling & accessing the pump, etc	Set	1.00			
37	Supply and installation of RCC Hume pipes of 300 mm dia & NP 2 Class with collars for road / below floor crossing of Fire water pipes / Domestic pipes. The rate shall include excavation, soil levelling for bed and ends shall be closed with Brick masonry work as directed by site engineer.	RMT	40.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
38	Providing and Fixing Position in MS angles/channels/ I Beams for supports, chasing of walls, grouting of supports, painting of supports etc., complete. The work shall also include painting of the entire supports, with one coat of Zinc Chromate primer & Two coats of approved make enamel paint the color shade shall be recommended by the client to suit the wall background. The pipes surface shall be cleaned to remove any grease and the paint shall be applied.	Kgs	300.00			
39	Making core cuts, then core paking with leak proof sealants, necessary cement mortars, jelly fillings, making neat finish.					
a)	160 Dia	Nos	8.00			
b)	110 Dia	Nos	8.00			
c)	75 Dia	Nos	8.00			
40	Supply and installation of Neco make or approved make CI manhole cover size 600x600 with theft proof hinged frame. fixed over 100 mm P.C.C. including painting of the frame, cover with 2 coats of anti- corrosive bitumastic paint over a coat of primer all as per specifications. The work shall include necessary exacavation and backfilling.					
a)	Heavy duty, Grade C-250, 600x600	Nos	2.00			
b)	Light duty Grade A-15, 600x600	Nos	4.00			
c)	Heavy duty, Grade B-125, 450x450	Nos	8.00			
41	Supply, installation, testing & commissioning of Water level controller for OHT & SUMP, Pump must On/Off based on with high/low level singals on both oht & sump, with neccessary electrodes. The scope of work includes, fixing of electrodes, termination of electrode sensor cable terminations, starter provision for 1w+1s pump of capacity 3 phase, 2.1kw. auto/manual selector, with sequence control & buzzar provisions.	Set	1.00			
42	3C x 1.5 Sq.mm cable for power and 3/4 inch PVC conduit including clamps, flexible hose, terminals, bend, reducer, joints, etc., The scope work includes laying the above said cable in walls, floor, burried, etc.	Rmt	86.00			

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Bill No.03 - Internal Plumbing works for EMI/EMC Lab And External Plumbing Works						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Grand Total (Bill No.03):					

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
SLNo.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.00	PART - A HT WORK					
1.01	Supply, Installation, Testing and Commissioning of 11kV, 630A, 25kA Outdoor type Ring Main Gear Incoming Indoor LBS type, As per TNEB specification. Incoming PANEL Load Break Switch-2NOS 11kV 630A, 350MVA, Air/Load break switch with Earth switch, with 2NO+2NC Aux. Contact ,Spring charged mechanism Manually operated -1 set Bus Bars Main Bus: 630 Amps Copper Busbar with HT Sleeve insulation -1 set Control Wiring -1 set Heater ON/OFF switch with filament type 80W space heater and thermostat, Single phase switch with socket, Cubicle illumination lamp, Door limit switch, MCBs / Fuses for AC / DC Control - 1 set Enclosure MS Sheet steel suitable for Indoor Installation Powder Coated with Siemens Grey Paint finish - 1 set Termination Incoming (Excluding cable termination kits, lugs and glands) Bottom entry Outgoing (Excluding cable termination kits, lugs and glands) Bus Bar Outgoing -1NOS 11kV, 630A, 25KA Horizontal Draw out/isolation VCB fitted with Manual/Motor operated spring charging mechanism with 230V AC motor and motor control switch, shunt trip coil of 110V DC, closing coil of 110V DC, Auxiliary Contact 4NO+4NC, Mechanical ON/OFF indicator, mechanical operation counter, pumping Anti feature, Automatic safety shutters and Push button	Set	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Potential Transformer Three Phase, Resin Cast, Dry type, Draw out PT with HT/LT fuses of ratio (11kV/1.732)/(110V/1.732), Core 1:Cl. 0.2 30VA Current Transformer single phase, Resin Cast, Dry Type Current Transformer of suitable Ratio /5-5A, Core 1: Cl. 0.2s / 5VA for metering, Core 2: Cl. 5P20 / 5VA for protection Meters Analog Ammeter with 5 Position selector switch Analog Voltmeter with selector switch Cutout Provision for Digital Trivector Meter L & T (or) Secure Make Cutout Provision for Digital Trivector Meter L & T (or) Secure Make Protection Relays Electromechanical type Triple-pole Non-Directional,IDMT, 2O/C + 1E/F with Highset with 1.3 Sec, CDG 61 Auxiliary Relays Master trip Relay VAJH 13 Indication Lamps VCB On/OFF/Auto Trip/Spring Charge/Trip Circuit Healthy Indication Lamps LED Type R,Y,B Phase Indication Lamps Push Buttons Trip Circuit Healthy Push Button Control Switches Breaker Control Switch (Close-Neutral-Trip) Test Terminal Block					

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Bus Bars Main Bus: 630 Amps Copper Busbar with HT Sleeve insulation -1 set Control Wiring -1 set Heater ON/OFF switch with filament type 80W space heater and thermostat, Single phase switch with socket, Cubicle illumination lamp, Door limit switch, MCBs / Fuses for AC / DC Control - 1 set Auxiliary DC Power Source - 230V AC to 110V DC Enclosure MS Sheet steel suitable for Outdoor Installation Powder Coated with Siemens Grey Paint finish - 1 set Termination Incoming (Excluding cable termination kits, lugs and glands) Bus Bar Bottom entry Outgoing (Excluding cable termination kits, lugs and glands) Bottom entry					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.02	Supply, Installation, Testing and Commissioning of 11kV, 25KV 630A, Outdoor type HT 1 VCB Panel, As per technical specification. Vacuum Circuit Breaker 11kV, 630A, 25KA Horizontal Draw out/isolation VCB fitted with Manual/Motor operated spring charging mechanism with 230V AC motor and motor control switch, shunt trip coil of 110V DC, closing coil of 110V DC, Auxiliary Contact 4NO+4NC, Mechanical ON/OFF indicator, mechanical operation counter, pumping Anti feature, Automatic safety shutters and Push button Potential Transformer Three Phase, Resin Cast, Dry type, Draw out PT with HT/LT fuses of ratio (11kV/1.732)/(110V/1.732), Core 1:Cl. 0.2 30VA Current Transformer single phase, Resin Cast, Dry Type Current Transformer of suitable Ratio /5-5A, Core 1: Cl. 0.2s / 5VA for metering, Core 2: Cl. 5P20 / 5VA for protection Meters Analog Ammeter with 5 Position selector switch Analog Voltmeter with selector switch Cutout Provision for Digital Trivector Meter L & T (or) Secure Make Protection Relays Electromechanical type Triple-pole Non-Directional, IDMT, 20/C + 1E/F with Highset with 1.3 Sec, CDG 61	Set	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Auxiliary Relays Master trip Relay VAJH 13 Indication Lamps VCB On/OFF/Auto Trip/Spring Charge/Trip Circuit Healthy Indication Lamps LED Type R,Y,B Phase Indication Lamps Push Buttons Trip Circuit Healthy Push Button Control Switches Breaker Control Switch (Close-Neutral-Trip) Test Terminal Block Bus Bars Main Bus: 630 Amps Copper Busbar with HT Sleeve insulation -1 set Control Wiring -1 set Heater ON/OFF switch with filament type 80W space heater and thermostat, Single phase switch with socket, Cubicle illumination lamp, Door limit switch, MCBs / Fuses for AC / DC Control - 1 set Auxiliary DC Power Source - 230V AC to 110V DC Enclosure MS Sheet steel suitable for Outdoor Installation Powder Coated with Siemens Grey Paint finish - 1 set					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Termination Incoming (Excluding cable termination kits, lugs and glands) Bus Bar Bottom entry Outgoing (Excluding cable termination kits, lugs and glands) Bottom entry 11kV 630A, 350MVA, Air/Load break switch with Earth switch, with 2NO+2NC Aux. Contact ,Spring charged mechanism Manually operated -1 set Bus Bars Main Bus: 630 Amps Copper Busbar with HT Sleeve insulation -1 set Control Wiring -1 set Heater ON/OFF switch with filament type 80W space heater and thermostat, Single phase switch with socket, Cubicle illumination lamp, Door limit switch, MCBs / Fuses for AC / DC Control - 1 set Enclosure MS Sheet steel suitable for Indoor Installation Powder Coated with Siemens Grey Paint finish - 1 set					
	Termination Incoming (Excluding cable termination kits, lugs and glands) Bottom entry Outgoing (Excluding cable termination kits, lugs and glands) Bus Bar Note: Provision made for Main Busbar Extension to be given both end of the PANEL for future extension.					

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.03	11KV/433V 400KVA Outdoor Oil Type Transformer Details : 11kV /433V 400kVA, Dyn11, Three phase, ONAN, Transformer with +10% to -10% voltage variation in steps of 2.5 % through On Load Tap changer, control by RTCC panel. Impedance 5% Termination Incoming (Excluding cable termination kits, lugs and glands) Bottom Outgoing (Excluding cable termination kits, lugs and glands) Bottom	Set	1			
1.04	HT CABLES AND END TERMINATIONS					
a	HT POWER CABLES: Supply, Leading, lifting, erection, testing and commissioning of 3 core 185 sqmm 11 kV, HT XLPE Aluminium conductor individual core screened, flat steel strip armoured, PVC sheathed cable	Mtrs	73			
b	TERMINATIONS					
i)	Supply, termination, testing and commissioning of OUTDOOR type termination kit and accessories suitable for 11KV, 3 core 185 Sqmm XLPE cable.	No.	1			
ii)	Supply, termination, testing and commissioning of INDOOR type termination kit and accessories suitable for 11KV, 3 core 185 Sqmm XLPE cable.	Nos.	5			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.00	PART-B. PANELS					
2.01	OUTDOOR KIOSK PANEL CABLE ENTRY: BOTTOM Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Outdoor type, floor mounting, free standing, Compartmentalized design and fabricated with 14 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:- Incomer: 630 Amps 4P EDO ACB of 50kA(Ics) withstanding capacity with Adjustable Overload, Short Circuit Relays -1 Set There shall be one set of Metering Compartment incorporated with the following:- i) CTs of ratio 630/5Amps of Class 1.0 and burden 15VA with CT short link terminal block for metering - 3 Nos. ii) 1No Class 1.0, 96Sq.mm. Digital multi function meter with Inbuilt Selector Switch. iii) CTs of ratio 140/5Amps of Class 5p10 for EFR for Transformer neutral CT. iv) 1 set of CDG11 Earth fault relay v) 1 Set of RYB & On, Off, Trip Indication lamp of LED cluster Type with Control breaker shall also be provided.	Nos.	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.02	MAIN MV PANEL	Nos.	1			
	CABLE ENTRY: BOTTOM/TOP					
	Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 14 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:- Incomer 1: 630 Amps 4P EDO MP ACB of 50kA(Ics) withstanding capacity with Adjustable Overload, Short Circuit Relays -1 Set There shall be one set of Metering Compartment incorporated with the following:- i) CTs of ratio 630/5Amps of Class 1.0 and burden 15VA with CT short link terminal block for metering - 3 Nos. ii) 1No Class 1.0, 96Sq.mm. Digital multi function meter with Inbuilt Selector Switch. iii) CTs of ratio 630/5Amps of Class 1.0 and burden 15VA with CT short link terminal block for APFC - 1 No. iv) CTs of ratio 630/5Amps of Class 5P10 and burden 15VA with CT short link terminal block for Earth Fault Relay - 3 Nos. v) 1 set of (2 OC+1 EF) Earth fault relay vi) 1 Set of RYB & On, Off, Trip Indication lamp of LED cluster Type with Control breaker shall also be provided.					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Incomer 2: 630 Amps 4P EDO MP ACB of 50kA(Ics) withstanding capacity with Adjustable Overload, Short Circuit Relays -1 Set There shall be one set of Metering Compartment incorporated with the following:- i) CTs of ratio 630/5Amps of Class 1.0 and burden 15VA with CT short link terminal block for metering - 3 Nos. ii) 1No Class 1.0, 96Sq.mm. Digital multi function meter with Inbuilt Selector Switch. iii) 1 Set of RYB & On, Off, Trip Indication lamp of LED cluster Type with Control breaker shall also be provided. Incomer 3: (Solar Panel) 100 Amps TPN MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit Relays - 1 Set There shall be one set of Metering Compartment incorporated with the following:- i) CTs of ratio 100/5Amps of Class 1.0 and burden 15VA with CT short link terminal block for metering - 3 Nos. ii) 1No Class 1.0, 96Sq.mm. Digital multi function meter with Inbuilt Selector Switch. iii) 1 Set of RYB & On, Off, Trip Indication lamp of LED cluster Type with Control breaker shall also be provided. 100 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Bus coupler: 630 Amps 4P EDO ACB of 50kA(Ics) withstanding capacity with Adjustable Overload, Short Circuit Relays -1 Set Outgoings :Part - A 400 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 250 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 160 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 100 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 63 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set Outgoings :Part - B 400 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 160 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set 63 Amps TPN MCCB of 35kA(Ics) withstanding capacity with FOD, Adjustable Overload, Fixed Short Circuit Relays - 1 Set					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	NOTE: 01. The withstanding capacity shall be Ics only. 02. Electrical Interlocking arrangement and Auto operation should be provided between Incomer-1(EB), Incomer-2(DG) & Bus coupler(BC). Busbar : Aluminium Rating : 800 Amps TPN 50Hz Provision made for Main Busbar Extension to be given both end of the MAIN MV PANEL for future extension.					

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.03	LSB PANEL	Nos.	1			
	CABLE ENTRY: TOP					
	<p>Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 16 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:-</p> <p>Incomer 1: 63 Amps TPN MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit Relays - 1 Set There shall be one set of Metering Compartment incorporated with the following:- i) 3 Nos. of CTs ratio 63/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block. ii) 1No Class 1.0, 96Sq.mm. Digital VAF Meter with Inbuilt Selector Switch. iv) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided.</p> <p>Outgoings : 32 Amps TPN MCCB - 6 Set</p> <p>NOTE: 01.The withstanding capacity shall be Ics only. Busbar : Aluminium Rating : 100A TPN 50 Hz.</p>					

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.04	PSB CABLE ENTRY: TOP Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 16 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:- Incomer 1: 160 Amps TPN MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit Relays - 1 Set There shall be one set of Metering Compartment incorporated with the following:- i) 3 Nos. of CTs ratio 160/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block. ii) 1No Class 1.0, 96Sq.mm. Digital VAF Meter with Inbuilt Selector Switch. iv) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided. Outgoings : 32 Amps TPN MCCB - 6 Set 25 Amps TPN MCCB - 4 Set NOTE: 01. The withstanding capacity shall be Ics only. Busbar : Aluminium Rating : 160A TPN 50 Hz.	Nos.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.05	A/C PANEL CABLE ENTRY: TOP Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 16 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:- Incomer 1: 250 Amps TPN MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit Relays - 1 Set There shall be one set of Metering Compartment incorporated with the following:- i) 3 Nos. of CTs ratio 250/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block. ii) 1No Class 1.0, 96Sq.mm. Digital VAF Meter with Inbuilt Selector Switch. iii) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided. Outgoings : 63 Amps 4P MCB - 7 Set 32 Amps 4P MCB - 2 Set. NOTE: 01. The withstanding capacity shall be Ics only. Busbar : Aluminium, Rating : 125A TPN 50 Hz.	Nos.	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.06	UTILITY PANEL CABLE ENTRY: TOP Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 16 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Panel Board shall be incorporated with the following:- Incomer 1: 63 Amps TPN MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit Relays - 1 Set There shall be one set of Metering Compartment incorporated with the following:- i) 3 Nos. of CTs ratio 63/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block. ii) 1No Class 1.0, 96Sq.mm. Digital VAF Meter with Inbuilt Selector Switch. iii) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided. Outgoings : 16 Amps 4P MCB - 8 Set. NOTE: 01. The withstanding capacity shall be Ics only. Busbar : Aluminium, Rating : 100A TPN 50 Hz.	Nos.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.07	MCCB WITH ENCLOSURE (TESTING LAB)	Nos.	1			
	CABLE ENTRY: TOP & BOTTOM					
	<p>Supplying, Erecting, connecting & commissioning of a made up of sheet steel, dust and vermin proof of Cubicle type, Indoor type, floor mounting, free standing, Compartmentalized design and fabricated with 16 CRCA sheet steel for main frames, and 16 CRCA sheet steel Doors & partitions and removable of Gland plates. The Board shall be incorporated with the following:-</p> <p>400 Amps 4P MP base MCCB of 35kA(Ics) withstanding capacity with Adjustable Overload, Fixed Short Circuit and Earth fault Relays - 1 Set.</p> <p>There shall be one set of Metering Compartment incorporated with the following:-</p> <p>i) 3 Nos. of CTs ratio 400/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block.</p> <p>ii) 1No Class 1.0, 96Sq.mm. Digital MFM Meter with Inbuilt Selector Switch.</p> <p>iii) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided.</p> <p>NOTE: 1. Busbar to be extended incoming and outgoing for receiving incoming and outgoing cable.</p> <p>2. Shunt trip coil to be provided in the MCCB. This coil to be connected with Fire Alarm Panel.</p>					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.08	AUTOMATIC POWER FACTOR CORRECTION RELAY PANEL (APFCR PANEL) Supplying,erecting,connecting & commissioning of 140 KVAR APFCR Panel in MS CRCA sheet with free standing floor mounting enclosure with all necessary interconnections of capacitor Bank for 8-steps APFC relay shall be incorporated the following capacitors to maintain the power factor. INCOMER : 400 Amps TP+N MCCB of 35kA(Ics) withstanding capacity .. 01 No. with Adjustable overload and Fixed Short Circuit Relays There shall be one set of Metering Compartment incorporated with the following:- i) 3 Nos. of CTs ratio 400/5Amps of Class 1.0 for metering and burden 15VA with CT short link terminal block. ii) 1No Class 1.0, 96Sq.mm. Digital MFM Meter with Inbuilt Selector Switch. iii) RYB Indication lamp of LED cluster Type with Control breaker shall also be provided. iv) Auto Manual Selector Switch v) 8 Stage APFCR Relay - 1 No.	Nos.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Outgoing 1Sets - 50kVAR Banks each comprising : 200A 25kA TP MCCB, with 50KVAR capacitor duty contactor, 50kVAR capacitor, On Off indicator and On Off push button. 2Sets - 25kVAR Banks each comprising : 100A 25kA TP MCCB, with 25KVAR capacitor duty contactor, 25kVAR capacitor, On Off indicator and On Off push button. 1Set - 15kVAR Banks each comprising : 63A 25kA TP MCCB, with 15KVAR capacitor duty contactor, 15kVAR capacitor, On Off indicator and On Off push button. 1Set - 10kVAR Banks each comprising : 40A 25kA TP MCCB, with 10KVAR capacitor duty contactor, 10kVAR capacitor, On Off indicator and On Off push button. 3Set - 5kVAR Banks each comprising : 25A 25kA TP MCCB, with 5KVAR capacitor duty contactor, 5kVAR capacitor, On Off indicator and On Off push button. Busbar 1Set - 400A TPN Aluminium bus bars, interconnections with color coded heat shrinkable sleeves and SMC Bus bar supports.					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.09	UPS O/G PANEL	Nos.	1			
	CABLE ENTRY : TOP					
	Supplying, installing, testing & commissioning FLOOR MOUNTED CUBICLE TYPE OUTGOING UPS PANEL. The Board shall be incorporated with the following:- INCOMER : 63 Amps TP+2N MCCB of 25kA(Ics) withstanding capacity .. 01 No. with Adjustable overload and Fixed Short Circuit Relays OUTGOINGS: 32 AMPS TP+2N MCCB with 10 KA Withstanding Capacity - C curve ..4 Nos. NOTE: 01. The withstanding capacity shall be Ics only. BUSBAR : COPPER, RATING : 100 AMPS TP2N					
3.00	PART- C CABLE & END TERMINATION					
3.01	Supply and laying of following sizes of aluminium / copper conductor 1100 Volts grade XLPE armoured cable on cable trays / racks with necessary cable clamps, base support clamps, cable identification tags / markers etc. all complete as per IS / Inspecting Authorities.					
a	3 1/2C 300 Sqmm. Al. Ar. Cable	Mtrs.	147			
b	3 1/2C 240 Sqmm. Al. Ar. Cable	Mtrs.	55			
c	3 1/2C 150 Sqmm. Al. Ar. Cable	Mtrs.	208			
d	3 1/2C 95 Sqmm. Al. Ar. Cable	Mtrs.	59			
e	3 1/2C 35 Sqmm. Al. Ar. Cable	Mtrs.	434			
f	4 C 25 Sqmm Al. Ar. Cable	Mtrs.	112			
g	4 C 16 Sqmm Al. Ar. Cable	Mtrs.	492			
h	4 C 10 Sqmm Al. Ar. Cable	Mtrs.	107			
i	3 C 6 Sqmm Cu. Ar. Cable	Mtrs.	390			
j	3 C 2.5 Sqmm Cu. Ar. Cable	Mtrs.	18			
k	4 C 2.5 Sqmm Cu. Ar. Cable	Mtrs.	159			
l	16 C 2.5 Sqmm Cu. Ar. Cable	Mtrs.	72			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
q	Supply and laying of 3.5C 300Sqmm al ar. LT CABLE and burrying the cable to 1 meter depth including providing necessary cover blocks. All complete as required. The scope includes excavation re-filling of earth after burying the cable, making the surface good as per site requirement.	Mtrs.	190			
r	5Runs of 16Sq.mm. PVC Insulated stranded copper conductor wires (One each for Phase, 2 for Neutral) with 1Run of 16 Sq.mm. PVC Insulated multi stranded copper conductor wires for continuous earthing in 2.0 mm. thick MS Conduits / GI Flexible conduit laid in surface / Tray including fixing hardwares etc. (30KVA UPS TO UPS O/G Panel)	Mtrs.	27			
s	5Runs of 4Sq.mm. PVC Insulated stranded copper conductor wires (One each for Phase, 2 Neutral) with 1Run of 2.5 Sq.mm. PVC Insulated multi stranded copper conductor wires for continuous earthing in GI flexible Conduits laid in surface / Tray including fixing hardwares etc. (UPS O/G Panel To ADMIN UPS DB, SKILL CENTRE UPS DB, LAB UPS DB)	Mtrs.	196			
3.02	Supply and providing cable end termination for the following sizes of cable with necessary cable joints materials such as brass flanged type gland, crimping sockets adhesive taps etc.all complete.					
a	3 1/2C 300 Sqmm. Al. Ar. Cable	Nos.	18			
b	3 1/2C 240 Sqmm. Al. Ar. Cable	Nos.	4			
c	3 1/2C 150 Sqmm. Al. Ar. Cable	Nos.	10			
d	3 1/2C 95 Sqmm. Al. Ar. Cable	Nos.	4			
e	3 1/2C 35 Sqmm. Al. Ar. Cable	Nos.	8			
f	4C 25 Sqmm Al. Ar. Cable	Nos.	10			
g	4C 16 Sqmm Al. Ar. Cable	Nos.	18			
h	4C 10 Sqmm Al. Ar. Cable	Nos.	4			
i	3C 6 Sqmm Cu. Ar. Cable	Nos.	8			
j	3C 2.5 Sqmm Cu. Ar. Cable	Nos.	2			
k	4 C 2.5 Sqmm Cu. Ar. Cable	Mtrs.	8			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
l	16 C 2.5 Sqmm Cu. Ar. Cable	Mtrs.	2			
m	5Runs of 16Sq.mm. PVC Insulated stranded copper conductor wires (One each for Phase, 2 for Neutral) with 1Run of 16 Sq.mm. PVC Insulated multi stranded copper conductor wires for continuous earthing in 2.0 mm. thick MS Conduits / GI Flexible conduit laid in surface / Tray including fixing hardwares etc. (30KVA UPS TO UPS O/G Panel)	Nos.	4			
n	5Runs of 4Sq.mm. PVC Insulated stranded copper conductor wires (One each for Phase, 2 Neutral) with 1Run of 2.5 Sq.mm. PVC Insulated multi stranded copper conductor wires for continuous earthing in GI flexible Conduits laid in surface / Tray including fixing hardwares etc. (UPS O/G Panel To ADMIN UPS DB, SKILL CENTRE UPS DB, LAB UPS DB)	Nos.	6			
4.01	PART-D CABLE TRAYS & TRENCH					
	Design, Fabricating, Supply and Installing following size of ladder type GI cable trays 50mm x 2mm thick.including supply, providing necessary suspension arrangement from ceiling, suspension hardwares all complete including painting.					
a	750mm width.	Mtrs.	12.00			
b	600mm width.	Mtrs.	34.00			
c	450mm width.	Mtrs.	48.00			
d	300mm width.	Mtrs.	27.00			
e	150mm width.	Mtrs.	77.00			
4.02	Supply and providing 300 mm dia HUME pipe for LT CABLE and such services including burrying the pipe to the required depth including providing necessary chambers. All complete as required.The scope includes excavation re-filling of earth after buring the pipe, making the surface good as per site requirement.	Mtrs.	15			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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4.03	Supply and providing 120 mm dia HDPE pipe for LT CABLE and such services including burrying the pipe to the required depth including providing necessary chambers. All complete as including providing necessary chambers. All complete as required.The scope includes excavation re-filling of earth after burying the pipe, making the surface good as per site requirement.	Mtrs.	15			
5.00	PART-E. DBs & WIRING FOR COMMON AREA					
5.01	LIGHTING DB					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 12W SPN double door pattern LDB COMMON AREA comprising of :- 1No - 32A DP MCB as incomer. 10 Nos. - 6 A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall /recessed mounting 8W SPN double door pattern SHOP-1 & 2, Telecom, ATM comprising of :- 1No - 32A DP MCB as incomer. 6 Nos. - 6 A SP MCB outgoing.	Sets.	4			
c	VTPN DB FOR EXTERNAL LITING Supply, Erection, Testing & commissioning of wall /recessed mounting 8W TPN double door pattern compartmental phase, segregation VTPN DB EXTERNAL LIGHTING comprising of :- 1No - 32A TPN MCB as incomer. 8 Nos. - 16\10A TP MCB outgoing.	Sets.	1			
d	Supply, Erection, Testing & commissioning of wall /recessed mounting 12W SPN double door pattern ELDB for EMERGENCY LIGHTING comprising of :- 1No - 32A DP MCB as incomer. 10 Nos. - 6\10A SP MCB outgoing.	Sets.	1			
e	Supply, Erection, Testing & commissioning of wall / recessed mounting 63A 4P MCB Isolator with weather proof enclosure for A/C Outdoor Unit.	Sets.	5			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
f	Supply, Erection, Testing & commissioning of wall / recessed mounting 32A 4P MCB Isolator with weather proof enclosure for A/C Outdoor Unit.	Sets.	2			
g	Supply, Erection, Testing & commissioning of wall / recessed mounting 16A 4P MCB Isolator with weather proof enclosure for Pump.	Sets.	3			
h	Supply, Erection, Testing & commissioning of wall / recessed mounting 16A 2P MCB with enclosure for Inverter	Sets.	1			
i	Supply, Erection, Testing & commissioning of wall / recessed mounting 63A 4P MCB Isolator with enclosure for 30kVA UPS.	Sets.	2			
j	Supply, Erection, Testing & commissioning of 1 Ph. Energy Meter.	Sets.	4			
	<u>LIGHTING POINT WIRING</u>					
5.02	Wiring for light point as above and with 1.5 Sqmm PVC insulated multi-strand copper conductor 660V grade FRLS wires in suitable dia electrical grade ISI marked Stove enamel MS conduit with all conduit accessories etc. including providing 1.5 Sqmm multi-strand copper conductor PVC insulated 660V grade green colour wire for loop earth, control switch etc.all complete as required for completion of light point.					
a	1 light controlled by 1no. modular switch.	Nos.	1			
b	2 lights controlled by 1no. Modular switch	Nos.	2			
c	3 lights controlled by 1no. Modular switch	Nos.	1			
d	4 lights controlled by 1no. Modular switch	Nos.	3			
e	1 exhaust fan controlled by 1no. Modular switch	Nos.	2			
f	Supply and wiring for the above light point wiring form LDB to Room main switch board with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit wiring all complete as required.	Mtrs.	117			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
g	Supply and installation of 25 mm dia electrical grade open ISI marked Stove enamel MS conduit with all conduit accessories etc	Mtrs.	90			
5.03	NORMAL POWER WIRING					
a	Supply & fixing 5A 3 pin shuttered socket outlet with 5A 1 Way control switch on to the light control switch box itself with small wiring in places as required.	Nos.	1			
b	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required.	Nos.	1			
c	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	25			
d	Supply and installation of 25 mm dia electrical grade open ISI marked Stove enamel MS conduit with all conduit accessories etc. for above sockets.	Sets.	25.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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6.00	PART -F EARTHING					
6.01	Supply,Installation,Testing and commissioning of advance maintenance free Chemical Gel Earthing of Dual Pipe Technology (GI) of 3mtr long 50mm dia JK CHEMRODE filled with highly conducting metallic compounds with the permanent sealings at the both the ends with the lead terminal at the top along with 50 Kgs of RESLOW (mixture of Sulphate, Silica, Alumina, Iron Oxide, Titanium Oxide, Calcium Oxide, Potassium Oxide, Chloride, Nickel Oxide, Magnesium Oxide, Sodium Oxide, Zinc Oxide, etc) Resistance Lowering Grounding Minerals. The loss on ignition by mass of the chemical compound JK RESLOW is less than 20%. The chemical compound is tested and certified by any International accredited and BIS (Bureau of Indian Standards) accredited laboratory. The testing laboratory is tested ISO 9001 & ISO 14001 certified. The JK CHEMRODE is be duly tested & certified by CPRI (Central Power Research Institute), Govt of India for a minimum short circuit current of 30 KA rms.	Nos.	10			
	Transformer Panel Body Earthing ... 2Nos HT panel Body Earthing ... 4Nos LT panel Body Earthing ... 4Nos					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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6.02	Supplying, Erecting, connecting & commissioning a of Copper plate of size 600x600x3mm. at a depth of 3000mm.in an inner dimension of the earth pit of 400x400x3500mm. filled with salt and charcoal mixed with sand in alternate layers 150mm. each upto a height of 3000mm. from bottom. Two copper flats of 25x6mm. Shall be braced to this copper plate through out the over laping length with the copper plate and brought to the surface of the earthpit. This copper flat shall have provision for connecting wires of flats as the case may be. A suitable size of 40 mm.dia GI Pipe shall be provided upto the bottom of the earth pit.This GI Pipe shall have provision for watering through a funnel. A masonry structure shall be constructed to a depth of 500 mm and wall thickness shall be 230mm. and a Heavy duty SFRC Cover shall be used to cover the pit. The cost of digging and back filling shall also be included .Sand, salt and charcoal are in the Contractor's scope.	Nos.	3			
	Transformer Neutran Earthing ... 2Nos Server & UPS Earthing ... 1Nos					
6.03	Supplying, Erecting, connecting & commissioning a of 50x6mm. GI. Flat.	Mtrs.	195			
6.04	Supplying, Erecting, connecting & commissioning a of 40x6mm. GI. Flat.	Mtrs.	80			
6.05	Supplying, Erecting, connecting & commissioning a of 25x6mm. GI. Flat	Mtrs.	187			
6.06	Supplying, Erecting, connecting & commissioning a of 25x3mm. GI. Flat	Mtrs.	169			
6.07	Supplying, Erecting, connecting & commissioning a of 25x6mm. Cu. Flat	Mtrs.	61			
6.08	Supplying, Erecting, connecting & commissioning a of 10SWG. Cu. Wire	Mtrs.	178			

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6.90	Supplying, Erecting, connecting & commissioning a of 16Sqmm. Cu copper cable laid at a depth of 450mm. in ground to interconnect the earth electrode for Server Neutral.	Mtrs.	25			
7.00	<u>PART-G LUMINARIES /FITTINGS</u>					
7.01	Supply and erection of surface mounted Square downlight 16W LED as per requirement with necessary fixing hardwares, wires etc. All complete. Equivalent to. K-Lite Cat.No. 7331	Nos	15			
7.02	Supply and erection of wall mounted Die-cast Aluminium body heat resistance prismatic glass conver with specially design gasket Bulk head light fitting with 1 x 10W LED lamp, Bajaj cat.No.BAJAJ-BIBWP 10W LED or equalent as per instruction of Enginee-In-charge.	Nos	2			
7.03	Supply and erection of 9x2W LED Fountain light fixture as per requirement of installation materials, masonry work with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 4129 .	Nos	1			
7.04	Supply and erection of 3W LED In-Ground light fixture as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 4092 .	Nos	5			
7.05	Supply and erection connecting commissioning of Bollard light fixture requirement with necessary masionary work, fixing hardwares, wires etc. all complete. Equivalent to. Bajaj Cat. No. BGBOS 600 9W LED .	Nos	12			
7.06	Supply and erection connecting commissioning of street light fixture requirement with necessary, fixing hardwares, wires etc. all complete. Equivalent to. Bajaj Cat. No. BRTFG 60W LED	Nos	15			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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7.07	Design, supply, erection and testing steel tubular poles height 6 M above ground level and 1.5 M below ground level with bottom 125 mm dia. and 100 mm dia. for middle and 75 mm dia. along with 1 M long bracket including providing base plate providing concreting in foundation. Construction of pillar accommodating 20A DP MCB housed in weather proof box including wiring to the light fittings with 3 runs of 2.5sqmm PVC insulated copper conductor, supplying and fixing 4 way 30 A rated terminal block loop in loop out cable arrangements coil earthing etc. The pole shall be painted with one coat of primer and two coats of enamel paint as required by the Engineer in charge.	Nos.	15			
7.08	Supply and laying of following sizes of aluminium /copper conductor 1100 Volts grade XLPE armoured cable buried 450mm depth, laid cable in the trench, provide cover blocks on the cable for protection and refill the sand original surface etc. all complete as per IS / Inspecting Authorities.					
a	4C x 10 Sqmm. Al. Ar. Cable	Mtrs.	535			
b	3C x 2.5 Sqmm. Cu. Ar. Cable	Mtrs.	273			
7.90	Supply and providing cable end termination for the following sizes of cable with necessary cable joints materials such as brass flanged type gland, crimping sockets adhesive taps etc.all complete.					
a	4C x 10 Sqmm. Al. Ar. Cable	Nos.	74			
b	3C x 2.5 Sqmm. Cu. Ar. Cable	Nos.	20			
8.00	PART-H SAFETY EQUIPMENTS					
a	Supply and laying of 12mm thick 1000mm wide chequered rubber mat with ISI mark suitable for 440 V installation .	Sqm.	10			
b	Supply and fixing of HT cable route indicator made out of MS flat and angle iron.	Nos.	1			
c	Supply and providing first aid box 18SWG MS sheet duly painted as approved by Indian red cross soccity complete with all first aid medicines.	Nos.	2			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
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d	Supply and providing shock treatment chart in English, Hindi and Tamil duly framed with 2mm thick glass in front & 6mm thick ply on back as required.	Nos.	2			
e	Supply and fixing of GI fire buckets with round bottom, each set comprising 4Nos.fire buckets of 9Kg capacity including supply of M.S pedestal stand with hooks suitable for holding of 4Nos of fire buckets, painted with Post Office Red oil paint and letter FIRE on each bucket and filling with sand complete as required.	Nos.	2			
f	Supply of tested hand gloves of 11KV grade.	Nos.	1			
g	Supply of tested hand gloves of 440KV grade.	Nos.	2			
h	Supplying and fixing 11 KV Danger Board.	Nos.	1			
i	Supplying and fixing 440 V Danger Board.	Nos.	4			
j	Supply and erection of fire extinguisher Co2 4.5 Kg. confirm to IS norms.	Nos.	2			
k	Supply & Fixing of Artificial Respirator for Inspiration with chart showing the use of it.	Nos.	1			
l	Supply & Fixing of MS sheet board of size 500mm x 300mm of 16 SWG with Entry Restricted To Authorised Persons Only near the Main entrance of the Substation. The lettering shall be Black painted on Yellow Back ground.	Nos.	2			
9.00	PART-I MISCELLANEOUS					
a	Preparation of AS BUILT Drawings -3 SET	Job	1			
10.00	FOR EMI/EMC LAB INTERNAL ELECTRICAL					
10.01	LIGHTING & POWER DBS					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 6W TPN double door pattern compartmental phase segregation LDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 30mA RCCB as sub incomer. 18 Nos. - 6 A SP MCB outgoing.	Sets.	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
b	Supply, Erection, Testing & commissioning of wall /recessed mounting 6W TPN double door pattern compartmental phase segregation PDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 100mA RCCB as sub incomer. 18 Nos. - 6 A SP MCB outgoing.	Sets.	1			
10.02	UPS DB					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 8W TPN double door pattern compartmental phase segregation UPS DB comprising of :- 1No - 32A TP+2N MCB as incomer. 3No - 32A 2P NCB as sub incomer. 24 Nos. - 6\16A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall / recessed mounting 16A MCB with Enclosure for Emergency lighting circuit.	Sets.	2			
10.03	WIRING					
i)	LIGHTING POINT WIRING Wiring for light point as above and with 1.5 Sqmm PVC insulated multi-strand copper conductor 660V grade FRLS wires in suitable dia electrical grade ISI marked Stove enamel MS conduit with all conduit accessories etc. including providing 1.5 Sqmm multi-strand copper conductor PVC insulated 660V grade green colour wire for loop earth, control switch etc.all complete as required for completion of light point.					
a	1 light controlled by 1no. modular switch.	Nos.	28			
b	2 lights controlled by 1no. Modular switch	Nos.	10			
c	3 lights controlled by 1no. Modular switch	Nos.	12			
d	4 lights controlled by 1no. Modular switch	Nos.	4			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
e	1 Ceiling fan controlled by 1no. Modular switch	Nos.	1			
f	1 exhaust fan controlled by 1no. Modular switch	Nos.	3			
g	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. (for Pedastal Fan)	Nos.	24			
h	Supply and wiring for the above light point wiring form LDB to Room main switch board with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/openISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	371			
i	Supply and wiring for the above fan socket point wiring form SW box to Fan socket with 3 runs 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	166			
j	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc	Mtrs.	268			
k	Supply and installation of 25 mm dia electrical grade concealed / open ISI marked PVC conduit with all conduit accessories etc	Mtrs.	236			
ii)	NORMAL POWER WIRING					
a	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. FOR VRV A/C INDOOR UNIT	Nos.	10			
b	Supply & fixing 5A 3 pin shuttered socket outlet with 5A 1 Way control switch on to the light control switch box itself with small wiring in places as required.	Nos.	1			
c	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required.	Nos.	5			
d	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required. For Hand Dryer	Nos.	4			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
e	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required. (for Normal S	Mtrs.	147			
f	Supply and wiring for the above socket with 2 runs 4 Sqmm and 1 run 2.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	166			
g	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc	Mtrs.	160			
h	Supply and installation of 25 mm dia electrical grade concealed ISI marked PVC conduit with all conduit accessories etc, for above sockets	Sets.	101			
10.04	UPS POWER					
a	Supply and Installation of 1No of 5A independant shuttered socket outlet with a controlling 1No. of 6A switch, modular plate etc. including MS Modular box all complete as required.	Nos.	3			
b	Supply and Installation of 3No of 6A shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc. including MS Modular box all complete as required.	Nos.	58			
c	Supply and Installation of 1No of 16A independant shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc.including MS Modular box all complete as required.	Nos.	2			
d	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	554.00			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
e	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc	Mtrs.	171			
f	Supply and installation of 25 mm dia electrical grade concealed ISI marked PVC conduit with all conduit accessories etc.,	Mtrs.	191			
g	Supply and installation of 32x20mm DLP U-PVC mini trunking system ISI marked with all accessories etc.,	Mtrs.	82			
10.05	LUMINARIES /FITTINGS					
i)	Supply and erection of Recessed mounted 26W LED light fixture as per requirement with necessary fixing hardware, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7667	Nos	54			
ii)	Supply and erection of Recessed mounted 18W LED light fixture as per requirement with necessary fixing hardware, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7666	Nos	33			
iii)	Supply and erection of surface mounted Square downlight 16W LED as per requirement with necessary fixing hardware, wires etc. All complete. Equivalent to. K-Lite Cat.No. 7331	Nos	8			
iv)	Supply and erection of suspended type downlight 5W LED as per requirement with necessary fixing hardware, wires etc. All complete. Equivalent to. TISVA JUBILO SP1039	Nos	3			
v)	Supply and erection of LED strip light fixture with driver as per requirement with necessary fixing hardware, wires etc. all complete. Equivalent to. Bajaj Cat. No. 25w professional LED strip IP20 WH	Mtrs.	38			
vi)	Supply and erection of wall mounted Die-cast Aluminium body heat resistance prismatic glass cover with specially design gasket Bulk head light fitting with 1 x 10W LED, equalent to Bajaj cat.No.BAJAJ-BIBWP 10W LED.	Nos	4			
vii)	Supply & erection of 1200mm ceiling fan suitable for room height with necessary fixing hardware, wires etc. all complete.	Nos	1			
11.00	FOR EMI/EMC LAB TELEPHONE, DATA, PAC & ACS WORK					

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
a	Supplying, Erecting, connecting & commissioning of 30 Pair (IDF30P) Krone Connector Type Telephone Main tag Block in 16Gauge Thick sheet steel enclosure.	Nos	1			
b	Supplying, Erecting, connecting & commissioning of 2 pair 0.5 mm un armoured cable	Mtrs.	450			
c	Supplying, Erecting, connecting & commissioning of 3 meter 2 Pair 0.5mm Dia Unarmoured TelephoneCables with both end RJ-11	Mtrs.	26			
d	Supply and installation of one no of RJ-11 with face plate and Back box	Nos	1			
e	Suplly and Installation of One no of RJ-45 I/O with face plate and Back Box	Nos	33			
f	Supply and Instalaation of One no of RJ-45 and One no of RJ-11 with Dual Face plate and Back Box	Nos	24			
g	Supply and installation of WIFI router with accessories	Nos	1			
h	CLIP/Caller ID Anaologue Phones	Nos	24			
i	Digital Phones compatible with EPABX	Nos	2			
11.01	RACK FOR NETWORK AND CCTV					
a	Supply erection, connecting & commissioning of 6U rack.	Nos	1			

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Bill No.04 - Electrical and ELV works for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
11.02	NETWORK SWITCH					
a	Supplying, Erecting, connecting & commissioning of 24 Port Patch Panel	Nos	3			
b	Supplying, Erecting, connecting & commissioning of 24 Port Gigabyte Switch (Non PoE)	Nos	3			
c	Supply and installation of Two meters patch cord in patch panel to Network Switch (Rack End)	Nos	57			
d	Supply and installation of Two meters patch cord (USER END)	Nos	57			
e	Supplying, Erecting, connecting & commissioning of cat-6 4 Pair UTP data Cables in 2.0mm thick Heavy duty PVC Conduits already laid in Floor raceway / surface on ceiling. from Network Switch to RJ-45 socket.	Mtrs.	1193			
3.00	PVC CONDUITS FOR TELEPHONE/DATA					
11.03	Supplying, Erecting, connecting & commissioning of the following Heavy duty PVC Conduits laid in surface on ceiling / Tray.					
a	25mm. Dia PVC Conduits	Mtrs.	472			
b	system ISI marked with all accessories etc	Mtrs.	8			
	Grand Total (Bill No.04):					

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Bill No.05 - HVAC work for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	VRF UNITS - R410A					
1.00	Supply, installation, testing & commissioning of VARIABLE REFRIGERANT FLOW/VOLUME SYSTEM of below mentioned capacities comprising of COMPLETE INVERTER & Scroll Compressor and complete with the following, Scope of work includes necessary vibration isolators, Ms supports, bolts, nuts, anchoring, brazings for both indoor and outdoor units, lifting shifting & positioning of both indoor and outdoor units.					
1.01	Out door machine - 10HP	2	Nos.			
1.02	Out door machine - 16HP	1	Nos.			
1.03	Refnet for the above	1	Lot			
1.04	Supply and instalton of exposed copper pipe needs to protected -including of PVC pipe 4kg/cm2 and GI outer cover Try with required supports	10	Rmt			
1.05	Supply and instalton of wireless Remote Controller for indoor unit operation	12	Nos.			
1.06	Supply and instalton of Cassette Unit-1.0TR or equalant, cooling capacity.	1	Nos.			
1.07	Supply and instalton of Cassette Unit-1.59TR or equalant, cooling capacity.	1	Nos.			
1.08	Supply and instalton of Cassette Unit-2.56TR or equalant, cooling capacity.	1	Nos.			
1.09	Supply and instalton of Cassette Unit-3.18TR or equalant, cooling capacity.	5	Nos.			
1.10	Supply and instalton of Cassette Unit-3.98TR or equalant, cooling capacity.	2	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	DX-UNITS					
2.00	Supply, installation testing and commissioing of factory built DX unit. It should have a thermostat contlol. The ductable split units shall be complete with outdoor units, required valves, piping works with insulation approx distance 15mtr, supports for the pipes, outdoor machines, rubber pads, and 25mm dia Heavy grade insulated PVC Drain piping (20 Rmt per unit) and neccessary supports to hold the outdoor and indoor units. The suitable disconnect switch, cables shall be clamped at a regular intervals using necessary GI clamps apprx 20 rmt and fasteners. End terminations and Earthing work as per I.E regulations for the above power wiring. Copper Earthing for all the equipment, switch boards, switches.					
2.01	High wall split Unit -2TR, cooling capacity, single booster Stablizer for above High wall split Units. with remote control & drain pump - ATM,Shop1,Shop2 & Telecommunication.	1	Nos.			
2.02	Supply and instaltion of Central Control system - Maximum 64 groupes of indoor units should be controlled individually, and must have zone control, malfunction code display, unified on/off controller, schedule timers.	1	Nos.			
2.03	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc., for communication control between indoor units and Central remote unit					
a	2Cx1.0 Sqmm Cu. Wire	260	Rmt			
2.04	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc.,					
a	4Cx16 Sqmm Cu. Wire	8	Rmt			
b	4Cx10 Sqmm Cu. Wire	8	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.05	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	35	Nos.			
2.06	Supply, installation and commissioning of perforated cable tray with required supports, angles, hangers, bolts & nuts.					
a	150 mm wide	100	Rmt			
2.07	Supply and installation of double 16G Earthing Strip for motor body earth, scope of work includes running the earthing strip / wire from the body to main earth strips.	30	Rmt			
2.08	Supply and installation of MS, hangers, supports, angle supports for pipes, indoor units and out door units, brazings as shown in the layout, etc., including two coat expoxy enamel paint	60	Kg			
	COPPER PIPING - INTERNAL, EXTERNAL & CABLING					
3.00	Supply and installation of Hardened 19G-21G copper pipes suitable for welding, pressure testing, vaccumising, flushing, charging R410A refregerent gas, with necessary insulations with fire glass run around FRP cloth, slot angle supports, polysheild coatings for pipes.					
3.01	28.6mm OD with insulation of 19mm thick for suction & 13mm for liquid line	13	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
3.02	22.2mm OD with insulation of 19mm thick for suction & 13mm for liquid line	40	Rmt			
3.03	19.1mm OD with insulation of 19mm thick for suction & 13mm for liquid line	12	Rmt			
3.04	15.9mm OD with insulation of 19mm thick for suction & 13mm for liquid line	28	Rmt			
3.05	12.7mm OD with insulation of 19mm thick for suction & 13mm for liquid line	16	Rmt			
3.06	9.5mm OD with insulation of 19mm thick for suction & 13mm for liquid line	80	Rmt			
3.07	6.4mm OD with insulation of 19mm thick for suction & 13mm for liquid line	3	Rmt			
3.08	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-32mm with necessary U traps near the indoor units.	40	Rmt			
3.09	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-25mm with necessary U traps near the indoor units.	35	Rmt			
3.10	Supply, instaltion,testing and commissioning of Indigenous equipment including topping up of Refrigerant R-410A	1	Lot			
	AIR CONDITION LOW SIDE WORK					
4.00	Supply and installation of SMACNA standard, factory fabricated, flanged GI ducting,120GSM, 500pa, using food grade sealant for leakage arresting, wall to wall duct crossing area to be sealed with fire retardant sealent, built-in sealant, neoprene gaskets, GI metal cleats, turning vanes, Electro-galvanized bolts, nuts & washers, GI suspension rods, anchor grip bolts, supports for ducts.					
4.01	22G	1	Sqmt			
4.02	24G	124	Sqmt			

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Bill No.05 - HVAC work for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4.03	Metallized core fire rated flexible ducts with totally encapsulated helically wound spring wire. The flexible duct shall consists of outer and inner jacket with 16 kg/cum density, 25 mm thick fibre glass insulation in the middle. The price quoted shall include supports for the flexible duct. The diameter of the duct shall be as under:					
a	Circular Clamps for fixing flexible duct to GI ducts and diffuser box.	20	Nos			
b	100 dia - 1.5 mtr length	30	Rmt			
4.04	Supply and installation of Duct Thermal Insulation materials constructed by laminating a closed cell, cross linked polyethylene foam with tough re inforced aluminum foil facing of 19 mm thick insulation for SA/RA duct passing through the Conditioned space, Class O standards, thermal conductivity 0.032 w/m k(20 deg c ,50-70% R.H)	70	Sqmt			
4.05	Supply, installation and commissioning of Duct Accoustic (Nitrile rubber base, Open cell material 25mm thick, Thermal conductivity, 0.047w/m.k @20deg C, excellent absorption, 99.9% reduction of bacterial growth, class1 fire performance, with a density of 140-180Kg/cubicmeter)	35	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4.06	Supply, Installation, Testing and commissioning of Double skin outdoor mounted type Heat recovery unit made of 50mm thick panels consisting of GI casing of thickness 0.63mm outside layer and 0.63mm inside layer with factory injected PUF insulation, Supply & Return air Centrifugal blower(Forward curved/backward curved)sections with aerofoil constructions, Heat recovery wheel section, belt drive packages with TEFC motor suitable for operation on 415 +/- 10% volts, 50 Hz, 3 phase, A.C. power supply, Fresh air Pre-filter section, Heat recovery descicant wheel, Fresh air, return air & exhaust air dampers with suitable actuator with a provision for CO2 signal sensing,CO2 sensors with wiring to be included for each unit and all the necessary accessories, necessary vibration isolators and complete as per specifications. The duties of equipments listed below and accessories shall be as per equipment schedule. Heat recovery wheel efficiency should not be less than 75%. Unit shall be with VFD and with suitable bypass starter and BMS compatible and as per specifications					
a	250 Cfm Fresh air and Exhaust against a static pressure of 50 mm WG having suitable drive motors	2	Nos.			
b	400 Cfm Fresh air and Exhaust against a static pressure of 50 mm WG having suitable drive motors	1	Nos.			
4.07	Supply, installation , testing and commissioning of Variable Frequency drives, IP55 protection, disconnect switch. UL, CE certified, 5% non-saturating dual reactors on both rails of DC bus. Swinging chokes which do not provide full harmonic filtering throughout the entire load range are not acceptable. VFDs with saturating (non linear) DC reactors to provide additional 3% AC chokes, IBMS compatible.					
a	7.5kw	3	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	VENTILATION FANS					
5.00	Supply, installation, testing and commissioning of Ductable inline fan with single skin insulated panel, Fresh air/Exhaust air, fan Air flow capacity, Noise level of fan should not be more than 65 db(A) @ 1.5m, cables from motor to socket with required cables, plug top, end terminations, glands, crimpings, rmt of cable from the socket to the fan 3rmt, angle supports & hangers, proper fixing with fire rated canvas with the ducts.					
5.01	650cfm, ext static of 2.5mmWg wall type fan.	4	Nos.			
5.02	800cfm, ext static of 2.5mmWg wall type fan.	1	Nos.			
5.03	600cfm, ext static of 15mmWg Inline fan.	1	Nos.			
5.04	800cfm, ext static of 15mmWg Inline fan.	1	Nos.			
5.05	1000cfm, ext static of 15mmWg Inline fan.	1	Nos.			
5.06	1200cfm, ext static of 15mmWg Inline fan.	1	Nos.			
5.07	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	42	Rmt			
5.08	Volume Control Dampers of GSS blades, channels, flanges for duct mounting, operating handle, etc.	3	Sqmt			
5.09	Supply and instalation of Disc value/grilles size	2	Sqmt			
5.10	Supply and installation of al.powerderd coated exhaust louver	2	Sqmt			
5.11	Supply and instalation of Fire rated canvas for ductable fan mouth connection	5	Sqmt			
5.12	Supply and installation of CAV -150cfm	1	Nos.			
5.13	Supply and installation of CAV -900cfm	1	Nos.			
5.14	Required wall opening/chasing of copper pipe/cable try entry and civil closing of using fire retratent materials for the same	1	Lot			
	Grand Total (Bill No.05):					

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Bill No.06 - Fire Fighting and Fire Alarm System for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I.	FIRE FIGHTING WORK :					
1	Supply, Installation, Testing and Commissioning of MS class C Heavy duty pipe as per IS : 1239 for pipes up to 150mm NB and as per IS : 3589 with a wall thickness of 6 mm for pipes 200mm NB and above together with fittings, valves and accessories as under: Work will include painting for the above ground piping with one coat of primer and two coat of enamel paint of approved colour. Work will include cleaning of pipe, degreasing, rate must be inclusive of necessary supports, clamps, bolts, nuts,etc.					
a	100 mm NB	RMT	195			
b	25 mm NB	RMT	15			
2	Supply, Installation, Testing and Commissioning of C.I. Butterfly valve PN 16 Hand lever operated, wafer ends conforming to BS:5155.					
a	100 mm NB.	Nos.	4			
3	Supply, Installation, Testing and Commissioning of C.I. Non-return valve conforming to IS : 5312					
a	100 mm NB.	Nos.	1			
4	Supply, Installation, Testing and Commissioning of C.I Strainer					
a	100 mm NB.	Nos.	1			
5	Supply, Installation, Testing and Commissioning of Dial type pressure guage with 150mm dial and a range of 0-10 Kg./sq.cm. together with siphon and pet cock.	Nos.	1			
6	Supply, Installation, Testing and Commissioning of Air Release Valve with Ball Valve - 25 mm dia	Nos.	2			

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Bill No.06 - Fire Fighting and Fire Alarm System for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
7	Supply, Installation, Testing and Commissioning of 450 LPM at 2.5kg/cm ² , electrically driven horizontal centrifugal (End Suction type) pump at terrace level, with all necessary accessories like providing and fixing of coupling, coupling guard & baseplate for pump, fabricated mild steel channel with foundation bolts, etc. Pump shall have electrical motor of adequate H.P. suitable for electric supply of 415V, 50 Hz, 3Ph. The scope of work includes supply of suitable control panel for the start stop operations & required cabling between control panel to pump shall be approx 15rmt.	Set	1			
8	Supply, Installation, Testing and Commissioning of Internal hydrants including landing valve stations hose reels, etc., comprising of the following.					
a	63mm dia Single hydrant valve as per IS : 5290 together with cap and chain.	Nos.	2			
b	MS Single Arm Hose Reel Drum with IS Standard CR Sheet 18SWG Disc, IS Standard Bright Rod CNC Machined Inlet Connection, 6mm Thick Side Arm and 12 mm Thickness at the the Hose Reel Drum Centre for the durability of the Drum complete with ISI Marked Thermoplastic Hose and ABS Nozzle, 19mm dia, 36 Mtr length rubber braided hose. The unit shall be complete with 20mm dia shut-off valve, ball valve and wall mounting bracket with swivel arm.	Nos.	5			
c	2 lengths of 15Mtr long, 63mm dia RRL hose conforming to IS : 636 Type A with instantaneuos male / female gun metal couplings conforming to IS : 903. The hoses shall be ISI marked.	Nos.	5			

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.06 - Fire Fighting and Fire Alarm System for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
d	1No. gun metal 63mm dia short branch pipe with nozzle of 19mm dia conforming to IS : 903. The branch pipe shall be ISI marked.	Nos.	5			
9	Supply and Erection Structural Supports like MS Angle / Channel / 'U' clamps, etc.,	Kgs.	350			
10	Supply and installation of hot dip GI puddle flanges, as per IS-1239, fabricated out of 6mm MS Plate, fixed at the RCC walls of the fire tanks & Over head tanks, work includes painting with 2 coats of primer complete as required, refer tender dwgs for details.					
a	100mm Dia GI flange	Nos	1			
b	50mm Dia GI flange	Nos	1			
c	40mm Dia GI flange	Nos	1			
d	32mm Dia GI flange	Nos	3			
11	Supply, Installation, Testing and Commissioning of MS class C Heavy duty pipe as per IS : 1239 for pipes up to 150mm NB and as per IS : 3589 with a wall thickness of 6 mm for pipes 200mm NB and above together with fittings, valves and accessories as under: Work will include painting for the external below ground piping with all necessary fittings including weather proof protection with bitumatic paint and tape(4mm) before adhering the tape to the pipe, it is advisable to gently heat the synthetic primer coated pipe by a run of LPG torch until the wrapper gets blend with the pipe, tape is wrapped by spiral method over the pipe, the thickness of overlapped wrapping must be not less than 10mm thick in pipes and in joints wrapping thickness must be not less than 40mm Work will include cleaning of pipe, degreasing, excavatio of soil 1.5mtr below the ground or as shown in the dwg and to backfill with river sand the excavated soil. etc.					

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.06 - Fire Fighting and Fire Alarm System for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
a	100 mm NB	RMT	25			
12	Supply, Installation, Testing and Commissioning of Fire brigade inlet siamese connection (2way) manifold in including valves and check valve of size 150mm size along with 2 nos. 63mm dia instantaneous inlet arrangements to the main header with cap and chain etc., for external hydrants.	Nos	2			
13	Supply and Fixing of ABC 6 Kg IS:15683 Gas Cartridge. Design, construction and testing as per IS 15683 , Body Hydrotested at 35 bar, Operating temperature -30°C to +55°C, external epoxy powder coating with PO Red Shade No. 538 of IS 5, Supplied with standard accessories.	Nos	17			
14	Supply and Fixing of 4.5Kg CO2 Type Fire Extinguisher, Design, construction and testing as per IS 15683 with fire rating 21B. operating temperature -30°C to +55°C, supplied with body bearing IS 7285 mark and approved by CCoE tested at 250 kgf/cm2., fitted with ISI marked & CCoE approved valve as per IS 3224. CO2 Gas as per IS: 15222. externally painted with PO Red Shade No. 538 of IS 5, Supplied with standard accessories).	Nos	5			
II.	FIRE ALARM SYSTEM :					
15	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	14			

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.06 - Fire Fighting and Fire Alarm System for EMI/EMC Lab						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
16	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Above ceiling detectors.	Nos	9			
17	Supply and Installation of Conventional Response Indicator twin LED flush mounted on false ceiling only Plate Type.	Nos	9			
18	Supply, installation, testing & commissioning of fixed temperature and rate of rise heat detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	3			
19	Supply, installation, testing & commissioning of coventional Manual Call Point - Resettable type	Nos	3			
20	Supply,Installation, Testing & Commissioning of Supply of Conventional type Horn / Strobe wall mounted type rated at 90 dBA @ 1m for Audible annunciation and 15cd minimum flashing at 1 Hz for visual indication.	Nos	3			
21	Supply and laying, connecting, testing & commissioning of 2C x 1.5 sq.mm, Ar Copper conductor, FRLS Cable. The scope of work includes necessary clamps, supports & fixings for the cables in concealed walls, exposed walls, Iron Beams, civil structures, etc.,	Mts	425			
22	Supply, installation, testing & commissioning of Repeater Panel, complete finishing item of work as per the instruction of Engineer-In-Charge.	Nos	1			
	Grand Total (Bill No.06):					

HLL MEDI PARK LTD			
Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu			
SUMMARY OF COSTING (Administrative/Business Centre, Skill Development/Incubation Centre)			
Bill No	Description of Item	Amount in Figures (In Rs.)	Amount in Words
7	Civil Works.		
8	External works		
9	Plumbing		
10	Electrical & ELV Works		
11	HVAC		
12	Fire fighting work & Fire alarm system		
	GRAND TOTAL FOR ADMINISTRATIVE/BUSINESS CENTRE AND SKILL DEVELOPMENT/INCUBATION CENTRE		

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I	STURCTURAL WORKS					
A	EXCAVATION					
1	Earthwork & Filling					
a)	Excavation and filling in all kinds of soils including for pits, trenches, by mechanical, wedging, chiselling or by chemical compound, as well as manual for <i>upto 2.50m</i> below average ground level including protecting the sides of foundation, levelling the bottom of excavation including dewatering, consolidation and carting away surplus earth and stocking within the site for refilling as directed by Owner/Consultant	Cum	882.56			
2	Filling in foundation with soil obtained from excavation, in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	702.25			
3	Quarry Dust Filling					
a)	Filling in foundation with Quarry dust in layers not exceeding 15 cms thick well watered rammed and consolidated complying with relevant standard specification.	Cum	59.55			
4	Treatment of soil under floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor. With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	Sqm	775.83			
B	CONCRETE					
	All CC/RCC works shall be in strict conformity NBC 2007-SP7 and specification appended herewith. Unless otherwise specified all items of RCC are to be of RMC as per the grade mentioned in the respective items. a) The rates to include of dewatering, Ready Mix Concrete, hoisting by manual labour or pumping by means of mechanised equipment. Compaction by rodding, tamping, vibrating by an approved mechanical vibrator etc., protecting, curing including hacking, roughening of concrete surface for receiving plaster or any other finish including costs of all tests on all materials and concrete as and when directed by the owner/ Engineering consultant/ consultant.					

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Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	b) The rate for CC/RCC work shall include for forming projections, sinking of floor in toilets wherever directed, forming openings or niches, providing dowel bars and leaving pockets for fixing holdfast of door frames and frames of partion and also co-ordinating with other agencies for laying conduits, boxes, pipes,cutouts. clamps curing etc., as directed at site. c) The rates quoted shall include forming construction joints dummy/ construction joints, as specified / directed by Engineering consultant/ Owner. d) Formwork shall be paid seperately unless otherwise specified. Reinforcing steel shall be paid seperately unless otherwise specified. e) No finishing items are to be considered in quoting the rates of RCC items unless otherwise specified.					
1	PCC - M10					
1.1	Footing	Cum	47.49			
1.2	Flooring	Cum	38.79			
2	RCC - M35					
2.1	Footing	Cum	91.39			
2.2	Pedastal	Cum	4.57			
2.3	Column					
a	In Foundations	Cum	17.18			
b	In Ground floor	Cum	32.43			
2.4	Plinth Beam	Cum	40.49			
2.5	Grade slab	Cum	77.58			
2.6	Roof beam	Cum	16.44			
2.7	Roof Slab	Cum	205.64			
2.8	Lintel	Cum	13.00			
C	REINFORCEMENT WORKS					
	Supply, straighten, cut, bend to shape, fabricate, fix and tie in position Reinforcement steel (TMT Bars) of Fe500 grade in all rcc works. Rates to include Supply, testing, tieing with 18 gauge MS wire (Double strand) (actual weight (Length) laid in position will be measured and rate to include for all cuts and wastes) including cost of binding wire & cover blocks, lifting, scaffolding etc.in all floors.					

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Note : Unless noted otherwise the measurements in accordance with IS 1200 or equivalent BS. However reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance being made in the weight for rolling margin. Authorised laps and splices, couplers of any dia, Chairs of any shape will be measured seperatly. Rate should include Decoiling, Spacer bar of any shape & profile, cover block, wastage and binding wire, lead, lift, placing at all levels and as directed.					
1	All Steel bar reinforcement should be in lengths not exceeding 12 meters unless otherwise stated.	MT	52.90			
D	FORMWORK					
	Providing, fabricating and erecting form work at all levels and places wherever needed/specified as per drawing using 12mm thick Commerical Plywood, marine resistant waterproof ply with adjustable steel props of acceptable Staging system and with sufficient bracing as approved by consultant. Cost to include designing of proper form work and staging system to suit the requirements,Submission of design calculations and shop drawings for approval,sealing the joints with heavy duty brown self adhesive tape, aligning to line and levels including M.S. Ties, PVC Spacer, Providing openings/ cutouts/ pockets, applying deshuttering chemical, Deshuttering as approved by the consultant etc., complete at all levels					
1	PCC - M10					
1.1	Footing	Sqm	147.27			
2	RCC - M35					
2.1	Footing	Sqm	200.48			
2.2	Pedastal	Sqm	30.34			
2.3	Column					
a	In Foundations	Sqm	224.15			
b	In Ground floor	Sqm	422.01			
2.4	Plinth Beam	Sqm	325.11			
2.6	Roof beam	Sqm	116.93			
2.7	Roof Slab	Sqm	866.17			
2.8	Lintel	Sqm	125.00			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
F	WATERPROOFING					
1	TOILET					
	Providing and Laying of Chowgule Acryflex 2K Strong/fosroc or equivalent, a 2 Component Cementitious Elastomeric water proofing system. The waterproofing system is brush applied in 2 coats on pre-dampened surface. The scope of work includes treatment of all cold-joint, construction-joints, separation joint and honeycomb areas, which will be built up with High Strength Polymer Modified Mortar to achieve an even and uninterrupted waterproofing application.The Rates Quoted are for Plan Areas Only. Laying of Protection in CM 1:4 of thickness 25mm for floor, 20mm for walls till floor level and 18mm till 300mm above floor level admixed with Chowgule Integ 200, an IWC Complying to IS 2645:1975 as per manufacturer's specification approved by consultants. Note: The Rates Quoted are for Plan areas only.	Sqm	71.90			
2	TERRACE					
	Providing and Laying of Chowgule Acryflex 2K Strong/fosroc or equivalent , a 2 Component Cementitious Elastomeric water proofing system. The waterproofing system is brush applied in 2 coats on pre-dampened surface @ 2.00 Kgs/Sqm. The scope of work includes treatment of all cold-joint, construction-joints, separation joint and honeycomb areas, which will be built up with High Strength Polymer Modified Mortar to achieve an even and uninterrupted waterproofing application.	Sqm	866.17			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
II	ARCHITECTURAL WORKS					
A	MASONRY WORKS					
1	Providing and constructing 200mm, 150mm thick Porotherm Thermo hollow brick (400X200X200mm) (400X200X150mm) blocks from Wienerberger or equivalent as approved), masonry for external walls in cement mortar CM 1:4 (1 cement : 4 sand) mixed with approved non-shrinking compound as per manufacturer's instruction, including water proofing coat for the external exposed layer, including required formwork complete with raking out joints, curing, doing independent double legged scaffolding as per specifications etc. at heights, depths and leads as directed by PMC/Employer to his entire satisfaction. Blocks should be Listed by IGBC (Indian Green Building Council) in the 'Green Product Category' under-energy efficient product, material with recycled content & use of regional material and to withstand fire naturally as it fired at 1000 degrees and has a fire rating of F240 for 240minutes including painting on external surfaces as required.					
1.1	200mm thick wall					
	Ground floor	Sqm	521.04			
1.2	150mm thick wall					
	Ground floor	Sqm	37.00			
1.3	100mm thick wall					
	Ground floor	Sqm	380.00			
2	Preparing the surface & plastering the Internal surface of walls at all heights with C.M 1:4, using sieved sand 12 to15 mm thk including the cost of scaffolding curing etc complete in Corridor.	Sqm	403.18			
3	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete, and providing internal pain on walls acrylic emulsion/distemper paint of approved brand and manufacture to give an even shade with 2 coats over of primer coat, as per the instruction of Engineer-in-Charge, complete finished item of work :	Sqm	403.18			

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Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
B	FLOORING					
1	Supplying & Laying flooring with Premium quality Vitrified floor tiles (seamless) of size 600 x 600 mm confirming to ISO 13006/EN 176 Group Bia with tech.specification as Mohs scratch hardness greater than 6, Water Absorption of 0.06%, Modulus of Rupture greater than 27 N/mm, Deep Abrasion resistant less than 204 mm cube, Surface flatness, Straightness of sides ± 0.25%, thickness ± 5% of size of approved colour and size & thick as specified below, set in Laticrete adhesive L 290 / Bal endura and pointing with Laticrete make Latapoxy SP 100 of approved make, to matching colour shade as per Manufacturer's Specification and as directed. Rate shall include of polymer epoxy grout, wastages, for preparation of base surface, cleaning, acid wash, and finished surface, protection with Gypsum / Pop layer over Plastic sheet and removing the same before handing over,work at all levels and as directed. Rate shall be inclusive of forming pattern as shown in dwg and wastages etc; complete. (Basic rate Rs65/Sft)	Sqm	708.60			
2	Providing and laying Granite floor of 18mm thick (+/-) 1mm gang saw cut mirror polished premoulded and prepolished) machine cut for flooring 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. (Basic Price: 180/Sft) In Entry only	Sqm	13.37			
3	Screed - 1:3:6 50mm thick					
	Providing & Laying Screed concrete 1:3:6 flooring of 75mm Average Thick with 12 mm down aggregate including placing , compaction , curing and finished with machine trowel finsih (Rough/Smooth) only complete. Tolerance of +/- 4mm flatness will be applicable. Rate is inclusive of Providing Isolation, Construction joint, Check joint and curing the surface.	Sqm	125.00			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4	Providing and fixing 1st quality Ceramic Glazed Antiskid floor tiles of size 300 x300 mm confirming to IS:15622(thickness to be specified by the manufacturer), of approved make, in all colours such as white ,ivory,gre. fume red brown laid over 20 mm thick bed of cement mortar 1:4 , including pointing in white cement mixed with pigment of matching shade complete.	Sqm	55.00			
C	WALL DADOING					
1	Providing and laying Ceramic tiles (300 x 450) in cladding/ dado/ jamb/ soffit/ cill of uniform thickness, size, shade and pattern as approved by Engineer's Incharge laid with rich cement size, shade and pattern as approved by Engineer's Incharge laid with rich cement slurry over a bedding plaster of 6mm (avg.) thick cement mortar 1:3 (1 cement : 3 fine sand) including the cost of 12mm average thick rough base plaster of mix 1:3 (1 cement : 3 coarse sand), grouted with polymer based (acrylic) tile grouted (Bal grout) of matching shade of tile, cutting of tiles, scaffolding, curing etc. complete in all respects as per drawing.	Sqm	266.50			
E	JOINERIES					
1	WOODEN DOOR					
	Providing and fixing 32mm thick Wooden flush door with style, rail & lipping covered on both sides by plywood with 100mm x 57mm thick T.W. frame, with coal tar applied on hidden face of frame (encased in wall) including all oxidised brass fixtures, fastenings, making chases in masonry or drilling screws Rawl Plug in concrete surfaces and making them good after fixing the frames by means of M.S.hold-fasts of 40mm x 3 thick x 150mm long in situ PCC M15 of block size 150 x 200 x thickness of masonry only. Rate is inclusive of 1mm thick laminate finish on both sides 6mm thick Vision panel Complete as per the drawings, specifications and as directed by the Architect (All the doors shall be of the type which shall give minimum air leakage). Rate is inclusive of Iron Mongeries, Hydraulic door closer , Mortice Lock & Door Stopper					
a)	MD/FG - 1940 x 2135	Nos	2.00			
b)	MD1/FG - 1750 x 2135	Nos	5.00			
c)	WD1 - 1000 x 2135	Nos	13.00			
d)	WD2 - 915 x 2135	Nos	8.00			
e)	WD3 - 760 x 2135	Nos	7.00			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2	Physically Challenged Sliding Door					
	Supplying and fixing of 18mm thick laminated partical board fixed with MS railing bracket at top Hung with necessary fittings to finish the job					
a	SD - 900 x 2240	Nos	2.00			
3	STRUCTURAL GLAZING -STICK SYSTEM					
a)	Providing and fixing Stick System of Structural Glazing using aluminium extruded heavy duty special aluminium colour anodized /powder coated section. Framework to be made out of Verticals and Horizontals of size 65x55x2mm (1.45 kg/mt) to be fabricated and assembled to form a grid as required at site. The complete system should be designed to withstand wind pressure of 150 kg/sqmt. M.S brackets (galvanized) as required to be marked as per grid design and fixed to building structure with M.S galvanised base plate and Fischer Hammerfix fastners. The framework to be fixed to base plates with SS screws. 6mm thick STB 120 (Titanium Blue) glass to be fixed over the framework from outside with Structural Sealant (Dow Corning 795). Horizontal and Vertical gaps between two glass to and between glass and structure to be filled with Silicon weather sealant (Dow Corning 789) to make it complete airtight	Sqm	208.87			
4	FIXED LOUVRES					
	Providing and fixing Fixed Louvres using aluminium extruded aluminium anodized powder coated section. Outer frame to be made out of 63x38x2mm aluminium section assembled with necessary cleats and Bolts/nuts to required size. Louvre blades (4") made from aluminium 1/2" U channel at a spacing of 3" to be fixed into outer frames. 4mm pin head glass cut and edge polished to required size to be fixed into channel with suitable EPDM gaskets.					
a	V1 -Size: 1.63 x 0.62mts -1nos	Sqm	1.01			
b	V2 -Size: 0.92 x 0.62mts -2nos	Sqm	3.99			
5	FIXED GLASS / PARTITIONS					

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development/Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
a)	Providing and fixing Frameless Glass Partitions with 12mm Clear Toughened glass for maximum height of 3400mm. Glass shall be supported at top and bottom with aluminium 'U' Channel of size: 25x40mm and suitable PVC/rubber wedges. Channel to be fixed at bottom into groove cut in flooring with Fischer Hammer fix fastners. Channel at top to fixed into support frame using aluminium box section of size: 100x45x2mm using clamps, anchor bolts and Fischer Hammerfix fastners. Weather seal to be applied between channel and glass and between glass joints to form a complete glass partition	Sqm	210.84			
F	GYPSUM WORKS					
1	Drywall Partition					
	Providing and fixing partitions upto ceiling height consisting of GI frame and required board including providing and fixing of frame work of special section power pressed/ role formed GI sheet with Zinc Coating of grade 175 consisting of floor and cieling channel 50 mm wide having equal flanges of 32 mm and 0.50 mm thick fixed to the floor and cieling at the spacing of 610 mm centre to centre with dash fastner of 12.50 mm dia 40mm length and the studs 48 mm wide having one flange of 34 mm and another flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and cieling channel and placed at a spacing of 610 mm c/c by 6 mm dia bolts and nuts at both ends of partition fixed flushed to wall with rawl plugs at spacing of 450 mm c/c and fixing of boards to either side of frame work by 25 mm , drive all screws on studs, floor and cieling channels at the spacing of 300 mm c/c, including jointing and finishing to a flush finish with recomended jointing compound, jointing tape, joint finisher and two coats of primer suitable for board as per manufacturer specification and direction of Engineer-In-Charge all complete. 100 mm overall thickness with Gysum board conforming to IS 2095 Part 1 (Rate is inclusive of Painting)					
	Normal gypsum 12mm 2 layers(both side)	Sqm	329.59			

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Bill No.07 - Civil works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2	False ceiling					
	Providing and fixing Gypsum False Ceiling of DIAMOND FRAMES/Board LAFARGE, USG & India Gypsum make which includes G.I. Perimeter Channels of size 0.55mm thick (having One Flange of 20mm and another flange of 30mm and a web of 27mm) along with perimeter of ceiling, screw fixed to brick wall / partition with the help of Nylon sleeves and screws at 610mm centers. Then suspending G.I. intermediate channels of size 45mm (0.9mm thick with two flanges of 15mm each) from the soffit at 1220mm centers with ceiling angle of width 25mm X 10mm X 0.55mm thick fixed to soffit with G.I. cleat and steel expansion fasteners. Ceiling section of 0.55mm thick having knurled web of 51.5mm and two flanges of 26mm each with lips of 10.5mm are then fixed to the intermediate channel with the help of connecting clips and in direction perpendicular to the intermediate channel at 457 mm centers.	Sqm	861.85			
	Grand Total (Bill No.07):					

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative/Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.08 - External works forAdministrative/Business Centre and Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I	COMPOUND WALL					
1	Supplying and laying of 200m thick Blockwork upto a height of 1.5Mtr above FGL and below FGL with RCC Wall					
a)	RCC - M25	Cum	120.00			
b)	Shuttering	Sqm	812.10			
c)	Reinforcement	MT	18.00			
d)	Blockwork - 200mm Thick	Sqm	574.00			
e)	Plastering	Sqm	1,153.00			
f)	Painting	Sqm	1,153.00			
g)	Structural Steel incl painting with Zinc chromate and emulsion	Kg	1,249.00			
II	SECURITY CABIN					
1	Supplying and installation of pre-fabricated portable FRP security cabin of modular type with roof, size 2.4mt x 1.8mt including windows, door, all the fixtures & harwares complete finished item of work as per the given design and specification.	Set	1.00			
	Grand Total (Bill No.08):					

HLL MEDI PARK LTD						
Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.09 - Internal Plumbing works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
A	Part A - Sanitary Fixtures					
1	Supply & installation of Kohler make or approved make Wall Hung taller type European water closet for specially abled person with Plastic Cistern with elbow operated knob, foldable hinged arm, grab bar, down rails & C.P. bolts, nuts, Bakelite toilet seat and cover complete with all accessories. Including cutting & making good the walls & floors wherever required.	Nos.	8.00			
	EWC - SKU Code : 18131IN-S-0-Patio Wall Hung with Sc Seat - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Double Flush Knob Operated - SKU Code : 4177IN-M-Cp - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Bolts, nuts.					
	Cistern Tank - 3/6 Litres -SKU Code: 77027IN-M-NA Insta Flush Mech- Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above closet complete with supply of PVC / Brass Pan connectors, & necessary fasteners, fixing of the angle cock & CP brass connection pipe to the cistern. Providing water & Soil connections to the closet, together with cutting and making good the walls and floors wherever required.					

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Bill No.09 - Internal Plumbing works for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2	Supply of Kohler make - Caxton Under Counter Wash basin of White color together with supply of Approved 'make basin pillar cock, C.P brass bottle trap, pipe to wall escutcheon plate, CP waste coupling and rubber adaptor for waste connection. Supply of 1 nos. approved make CP angle cock together with CP brass connection pipes to the basin.	Nos.	10.00			
	Under Counter Wash basin -Caxton - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Kumin Piller Tap - SKU Code: 99452IN-4-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Grid Drain With Over Flow Hole - SKU Code: F850015 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Standard P Trap - SKU Code: 7314IN-Cp - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above Half-Pedestal Wash basin (K-96050IN-0)with supply & fixing of specially fabricated MS brackets with adjustable screws and nuts to suit the wash basin, fixing of the angle cocks & CP brass connection pipes and giving connections to the Cold water pipes & wash basin, together with cutting and making good the walls and floors wherever required. (Fittings shall be of approved make & Finish)					
3	Supply of Health faucet along with wall fixing bracket, 1 m long flexible tube, and CP angle cock.	Nos.	7.00			
	Cuff Health Faucet - SKU Code: F98100IN -0 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Angle Stop Valve- SKU Code: 11568IN-7-CP - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Fixing of the above health faucet, wall hook and angle cock, including wall chasing, making good the same, complete.					

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4	Supply & fixing of Lipka / chiily 127X127 mm SS floor square grating with removable plain round jali.	Nos.	16.00			
5	Supply & fixing of Lipka / chiily 127X127 mm SS floor Cleanout	Nos.	10.00			
6	Concealed Stop Cock Extra Heavy body with adjustable wall flange size 20mm Concealed Stop cock - F850097- Hindware or equalent type as per the instruction of Engineer-In-Charge.	Nos.	6.00			
7	Concealed Stop Cock Extra Heavy body with adjustable wall flange size 25mm Concealed Stop cock	Nos.	6.00			
8	Supply & Fixing of superior quality of approved type design, Double coat hook with complete screw fitting. Cat No : F880004 - Hindware or equalent type as per the instruction of Engineer-In-Charge.	Nos.	8.00			
9	Supply & Fixing of CP brass liquid soap dispenser with necessary fittings, etc., complete. Cat No : ASD 90W Askon or equalent type as per the instruction of Engineer-In-Charge.	Nos.	10.00			
10	Supply & Fixing of white color vitreous china Urinal of Size of approval make, complete with C.I. Bracket fixing to wall daddo with required materials like teak wood plugs packing pieces, screw nails etc, C.P. Bottle trap approved make, sensor kit must with complete back boxes, C.P. Spreader, Pipe, C.P. Dome Coupling etc. complete, testing & commissioning the installation. All materials of approved make & model	Nos.	4.00			
	Urinal - Cat No: K-5017IN-ER-0 - Kohler or equalent type as per the instruction of Engineer-In-Charge.					
	Urinal Sensour - K-8791T-C01-CP Kohler or equalent type as per the instruction of Engineer-In-Charge.					
11	Supply and fixing of Urinal partition magnum of approved make for Urinal border with necessary supports, bolts, nuts, etc.,	Nos.	2.00			
12	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws (K-5630IN-CP or equalent type as per the instruction of Engineer-In-Charge)	Nos.	15.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
13	Providing and fixing CP brass Tissue holder roller in polished chrome of approved make complete with CP brackets fixed to wooden cleats with CP brass screws (K-5632IN-CP or equivalent type as per the instruction of Engineer-In-Charge)	Nos.	8.00			
14	Providing and fixing Bardon Hand dryer with CP brackets fixed to wooden cleats with CP brass screws (5486T-0P or equivalent type as per the instruction of Engineer-In-Charge)	Nos.	2.00			
15	Supply & Fixing of single bowl sink with drain board drain points for connect the waste couplers, with necessary supports, brackets, bolts, nuts, at equal intervals, etc.,	Nos.	2.00			
B	Part B - Internal Drainage - Soil & Waste					
	Soil & Waste Buried in Sunken Floors & Above False Ceiling.					
16	Supply & Fixing of uPVC as per IS-4985/1968 with solvent 'weld type joints together uPVC pipe specials of approved make. The pipes shall be duly fixed at site, with necessary cutting & jointing of pipe with approved quality jointing, necessary bends, reducers, solvent. The pipes shall be fixed properly aligned with necessary bricks & mortar work. The scope of Work to include making necessary holes in the masonry walls etc., and making good the damaged portions with mortar filling with 1:4 mix. Before handing over, leak test shall be carried out and any defects found shall be rectified.					
a)	110 mm O.D pipe Type - B	RMT	63.00			
b)	75 mm O.D pipe Type - B	RMT	97.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Soil & Waste stacks in Shafts.					
17	Supply & Fixing of uPVC as per IS-13592-1992 with O' ring joints, SWR pipes with necessary reducers if required, together uPVC pipe specials of approved make. The pipes shall be duly fixed at site, with necessary cutting & jointing of pipe with approved quality jointing lubricant. The pipe shall be fixed properly aligned vertical with suitable MS pipe clamps. Work to include making necessary holes in the masonry walls etc.. and making good the damaged portions with mortar filling with 1:4 mix. Before handing over, leak test shall be carried out and any defects found shall be rectified. The work shall include supply and fixing of necessary angles/ channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	110 mm O.D pipe (SWR & UPVC) Type - B	RMT	100.00			
b)	75 mm O.D pipe (SWR & UPVC) Type - B	RMT	100.00			
	Internal Drain from Wash Basins					
18	Supply of rigid PVC pipes as per IS 4985, complete with necessary solvent cement joint fittings IS 7834 for drain piping between the bottle traps and up to the floor traps. Erection of the above pipe including cutting, jointing of the pipes with necessary fittings, erection of the pipes in wall chasing with necessary clamps and making good the chasings.					
a)	50 mm dia. 10 Kg class	RMT	73.00			
b)	40 mm dia. 10 Kg class	RMT	54.00			
c)	32 mm dia. 15 Kg class	RMT	92.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
19	Supply of uPVC pipes rain water down take pipes as per IS 13592-1992, with O' ring jointed ends and fittings. The scope shall include supply of necessary fittings. Fixing of the rain water downcomers, including cutting the pipes to size, reducers, jointing the pipes and fittings, erection of the pipes plumb in shafts and elsewhere, making end connections at both the gratings and gutters / channels at ground level etc., The work shall include supply and fixing of necessary angles/ channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	160 mm OD pipes-Type 'B'	RMT	112.00			
20	Supply and fixing of uPVC vent cowls with "O" ring joints, for Soil & Waste.					
a)	160 mm OD	Nos.	14.00			
C	Part C - Internal Water Supply.					
	Exposed Cold Water Pipes					
	Exposed Cold Water Pipes (in SHAFT)					
21	Supply and fixing of cPVC pipes make - Astral / Ajay complete with necessary solvent cement weldable fittings, confirming to ASTM F-441 for water supply piping in the vertical shafts. The pipes shall be erected plumb in the risers. Erection of the above pipe including cutting, jointing of pipes with necessary fittings, erection of the pipes plumb to vertical, clamping the pipes on to MS Hot dip galvanized clamps, pressure testing of pipes, complete.					
	The work shall include supply and fixing of necessary angles/channels for supports, chasing of walls, grouting of supports, painting of supports etc., complete.					
a)	40 mm dia. SDR 11	RMT	59.00			
b)	32 mm dia. SDR 11	RMT	83.00			
c)	25 mm dia. SDR 11	RMT	60.00			
d)	20 mm dia. SDR 11	RMT	48.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
	Concealed Hot and Cold Water Pipes					
22	Supply and fixing of class 1 SDR 11 cPVC pipes as per ASTM D-24846 threaded end connections for faucets for water piping. The end connections shall be standard fittings from Astral only. Erection & laying of water piping complete with fixing of necessary solvent welded fittings clamping the same on to wall chasing pressure testing complete. The work shall also include chasing the walls wherever required for concealed piping and making good the same after laying the pipes.					
a)	25 mm dia.	RMT	112.00			
b)	20 mm dia.	RMT	328.00			
23	Supply & fixing of "RB" make automatic air release valve with 1/2 ball valve of RB / itap make or equalent type as per the instruction of Engineer-In-Charge.	Nos.	6.00			
	Grand Total (Bill No.09):					

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Bill No.10 - Internal Electrical works for Administrative/Business Centre and Skill Development/Incubation Centre And Telephone, Data, PAS & ACS for Common Area						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.00	INTERNAL ELECTRICAL FOR ADMINISTRATIVE/BUSINESS CENTRE					
1.01	PART- A LIGHTING & POWER DBS					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 4W TPN double door pattern compartmental phase segregation LDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 30mA RCCB as sub incomer. 12 Nos. - 6 A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall /recessed mounting 4W TPN double door pattern compartmental phase segregation PDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 100mA RCCB as sub incomer. 12 Nos. - 6 A SP MCB outgoing.	Sets.	1			
1.02	UPS DB					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 6W TPN double door pattern compartmental phase segregation UPS DB comprising of :- 1No - 32A TP+2N MCB as incomer. 3No - 32A 2P MCB as sub incomer. 18 Nos. - 6\16A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall / recessed mounting 16A MCB with Enclosure for Emergency lighting circuit.	Sets.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
2.00	PART-B. WIRING					
	LIGHTING POINT WIRING					
2.01	Wiring for light point as above and with 1.5 Sqmm PVC insulated multi-strand copper conductor 660V grade FRLS wires in suitable dia electrical grade ISI marked Stove enamel MS conduit with all conduit accessories etc. including providing 1.5 Sqmm multi-strand copper conductor PVC insulated 660V grade green colour wire for loop earth, control switch etc.all complete as required for completion of light point.					
a	a) 1 light controlled by 1no. modular switch.	Nos.	34			
b	d) 2 lights controlled by 1no. Modular switch	Nos.	12			
c	e) 3 lights controlled by 1no. Modular switch	Nos.	9			
d	f) 4 lights controlled by 1no. Modular switch	Nos.	8			
e	h) 1 Ceiling fan controlled by 1no. Modular switch	Nos.	1			
f	i) 1 exhaust fan controlled by 1no. Modular switch	Nos.	3			
g	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. (for Pedastal Fan)	Nos.	17			
h	Supply and wiring for the above light point wiring form LDB to Room main switch board with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	391			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
i	Supply and wiring for the above fan socket point wiring form SW box to Fan socket with 3 runs 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	218			
j	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.	Mtrs.	298			
k	Supply and installation of 25 mm dia electrical grade open ISI marked PVC conduit with all conduit accessories etc.	Mtrs.	309			
2.02	NORMAL POWER WIRING					
a	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. FOR VRV A/C INDOOR UNIT	Nos.	12			
b	Supply & fixing 5A 3 pin shuttered socket outlet with 5A 1 Way control switch on to the light control switch box itself with small wiring in places as required.	Nos.	1			
c	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required.	Nos.	3			
d	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required. For Hand Dryer	Nos.	2			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
e	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	145			
f	Supply and wiring for the above socket with 2 runs 4 Sqmm and 1 run 2.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	62			
g	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.	Mtrs.	156			
h	Supply and installation of 25 mm dia electrical grade concealed / open ISI marked PVC conduit with all conduit accessories etc for above sockets.	Sets.	51			
2.03	UPS POWER					
a	Supply and Installation of 1No of 5A independant shuttered socket outlet with a controlling 1No. of 6A switch, modular plate etc. including MS Modular box all complete as required.	Nos.	5			
b	Supply and Installation of 3No of 6A shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc.including MS Modular box all complete as required.	Nos.	26			
c	Supply and Installation of 1No of 16A independant shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc.including MS Modular box all complete as required.	Nos.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
d	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	356			
e	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.,	Mtrs.	174			
f	Supply and installation of 25 mm dia electrical grade concealed ISI marked PVC conduit with all conduit accessories etc.,	Mtrs.	143			
g	Supply and installation of 32x20mm DLP U-PVC mini trunking system ISI marked with all accessories etc.,	Mtrs.	37			
3.00	PART-C LUMINARIES /FITTINGS					
3.01	Supply and erection of Recessed mounted 26W LED light fixture as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7667	Nos	56			
3.02	Supply and erection of Recessed mounted 18W LED light fixture as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7666	Nos	46			
3.03	Supply and erection of surface mounted Square downlight 16W LED as per requirement with necessary fixing hardwares, wires etc. All complete. Equivalent to. K-Lite Cat.No. 7331	Nos	1			
3.04	Supply and erection of suspended type downlight 9W LED as per requirement with necessary fixing hardwares, wires etc. All complete. Equivalent to. TISVA JUBILO SP1039	Nos	3			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
3.05	Supply and erection of LED strip light fixture with driver as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. Bajaj Cat. No. 25w professional LED strip IP20 WH	Mtrs.	142			
3.06	Supply and erection of wall mounted Die-cast Aluminium body heat resistance prismatic glass conver with specially design gasket Bulk head light fitting with 1 x 10W LED, Bajaj cat.No.BAJAJ-BIBWP 10W LED or equalent as per the instruction of Engineer-In-Charge.	Nos	2			
3.07	Supply & erection of 1200mm ceiling fan suitable for room height with necessary fixing hardwares, wires etc. all complete .	Nos	1			
4.00	TELEPHONE, DATA, PAS & ACS FOR ADMINISTRATIVE/BUSINESS CENTER					
4.01	ADMIN BLOCK					
a	EPABX with 8 Trunk Lines, 1PRI, 100 Analogue Extensions expandable to a maximum of 200 lines. Should support SIP Extensions, and IP Extensions. Should be compliant with The EPABX system shall be TEC/DOT approved and conform to the latest issue of relevant applicable International standards/IEC standard /Indian standards for design, manufacturing, safety, inspection and installation.	Nos	1			
b	Supplying, Erecting, connecting & commissioning of 200 Pair (MDF200P) Krone Connector Type Telephone Main tag Block in 16Gauge Thick sheet steel enclosure.	Nos	1			
c	Supplying, Erecting, connecting & commissioning of 30 Pair (IDF30P) Krone Connector Type Telephone Main tag Block in 16Gauge Thick sheet steel enclosure.	Nos	1			
d	Supplying, Erecting, connecting & commissioning of 2 pair 0.5 mm un armoured cable	Metre	378			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
e	Supplying, Erecting, connecting & commissioning of 3 meter 2 Pair 0.5mm Dia Unarmoured TelephoneCables with both end RJ-11	Metre	15			
f	Suplly and Installation of One no of RJ-45 I/O with face plate and Back Box	Nos	12			
g	Supply and Instalaation of One no of RJ-45 and One no of RJ-11 with Dual Face plate and Back Box	Nos	15			
h	Supply and installation of WIFI router with accessories.	Nos	1			
i	CLIP/Caller ID Anaologue Phones.	Nos	14			
j	Digital Phones with 2line LCD soft touch keys, Programmable soft keys support for hands free head set.	Nos	1			
4.02	RACK FOR NETWORK AND CCTV					
a	Supply erection, connecting & commissioning of 42U rack.	Nos	1			
4.03	NETWORK SWITCH					
a	Supplying, Erecting, connecting & commissioning of 16 Port Pach Panel	Nos	3			
b	Supplying, Erecting, connecting & commissioning of 16 Port Gigabyte Switch (Non PoE)	Nos	2			
b	Supplying, Erecting, connecting & commissioning of 16 Port Gigabyte Core Switch (Non PoE)	Nos	1			
c	Supply and installation of Two meters patch cord in patch panel to Network Switch (Rack End)	Nos	33			
d	Supply and installation of Two meters patch cord (USER END)	Nos	27			
e	Supplying, Erecting, connecting & commissioning of cat-6 4 Pair UTP data Cables in 2.0mm thick Heavy duty PVC Conduits already laid in Floor raceway / surface on ceiling. from Network Switch to RJ-45 socket.	Metre	841			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4.04	PVC CONDUITS FOR TELEPHONE/DATA					
a	Supplying, Erecting, connecting & commissioning of the following Heavy duty PVC Conduits laid in surface on ceiling / Tray. 25mm. Dia PVC Conduits	Metre	371			
b	Supply and installation of 32x20mm DLP U-PVC mini trunking system ISI marked with all accessories etc.,	Metre	22			
5.00	INTERNAL ELECTRICAL FOR SKILL DEVELOPMENT / INCUBATION CENTRE					
5.01	PART-A. LIGHTING & POWER DBS					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 4W TPN double door pattern compartmental phase segregation LDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 30mA RCCB as sub incomer. 12 Nos. - 6 A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall /recessed mounting 4W TPN double door pattern compartmental phase segregation PDB comprising of :- 1No - 32A 4Pole MCB as incomer. 3No - 25A 2P 100mA RCCB as sub incomer. 12 Nos. - 6 A SP MCB outgoing.	Sets.	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
5.02	UPS DB					
a	Supply, Erection, Testing & commissioning of wall /recessed mounting 4W TPN double door pattern compartmental phase segregation UPS DB comprising of :- 1No - 63A TP+2N MCB as incomer. 3No - 40A 2P 100mA RCCB as sub incomer. 12 Nos. - 6/16A SP MCB outgoing.	Sets.	1			
b	Supply, Erection, Testing & commissioning of wall / recessed mounting 32A MCB with Enclosure for Emergency lighting circuit.	Sets.	1			
6.00	PART-B. WIRING					
	LIGHTING POINT WIRING					
6.01	Wiring for light point as above and with 1.5 Sqmm PVC insulated multi-strand copper conductor 660V grade FRLS wires in suitable dia electrical grade ISI marked Stove enamel MS conduit with all conduit accessories etc. including providing 1.5 Sqmm multi-strand copper conductor PVC insulated 660V grade green colour wire for loop earth, control switch etc.all complete as required for completion of light point.					
a	1 light controlled by 1no. modular switch.	Nos.	23			
b	2 lights controlled by 1no. Modular switch	Nos.	28			
c	3 lights controlled by 1no. Modular switch	Nos.	6			
d	1 Ceiling fan controlled by 1no. Modular switch	Nos.	13			
e	1 exhaust fan controlled by 1no. Modular switch	Nos.	2			
f	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. (for Pedastal Fan)	Nos.	11			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
g	Supply and wiring for the above light point wiring form LDB to Room main switch board with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	460			
h	Supply and wiring for the above fan socket point wiring form SW box to Fan socket with 3 runs 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in existing concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for concealed wiring all complete as required.	Mtrs.	161			
i	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.	Mtrs.	306			
j	Supply and installation of 25 mm dia electrical grade open ISI marked PVC conduit with all conduit accessories etc.	Mtrs.	294			
6.02	NORMAL POWER WIRING					
a	Supply & fixing 6A 3 pin shuttered socket outlet with a controlling 6A single way control switch in its MS enclosure having earth stud at locations required. FOR VRV A/C INDOOR UNIT	Nos.	10			
b	Supply & fixing 5A 3 pin shuttered socket outlet with 5A 1 Way control switch on to the light control switch box itself with small wiring in places as required.	Nos.	1			
c	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required.	Nos.	3			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
d	Supply & fixing 5/16A 5 pin shuttered socket outlet with a controlling 15A single way control switch in its MS enclosure having earth stud at locations required. For Hand Dryer	Nos.	2			
e	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required. (for Normal S	Mtrs.	112			
f	Supply and wiring for the above socket with 2 runs 4 Sqmm and 1 run 2.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	77			
g	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.	Mtrs.	78			
h	Supply and installation of 25 mm dia electrical grade open ISI marked PVC conduit with all conduit accessories etc. for above sockets.	Sets.	34			
6.03	UPS POWER					
a	Supply and Installation of 1No of 5A independant shuttered socket outlet with a controlling 1No. of 6A switch, modular plate etc.including MS Modular box all complete as required.	Nos.	4			
b	Supply and Installation of 3No of 6A shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc.including MS Modular box all complete as required.	Nos.	20			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
c	Supply and Installation of 1No of 16A independant shuttered socket outlet with a controlling 1No. of 16A switch for combined socket, modular plate etc. including MS Modular box all complete as required.	Nos.	1			
d	Supply and wiring for the above socket with 2 runs 2.5 Sqmm and 1 run 1.5 Sqmm (Green colour for earth) multi-strand FRLS copper conductor 660V grade wire in concealed/open ISI marked suitable size MS conduit for open circuit , PVC conduit for consealed wiring all complete as required.	Mtrs.	265			
e	Supply and installation of 25 mm dia electrical grade open ISI marked stove enamel MS conduit with all conduit accessories etc.	Mtrs.	76			
f	Supply and installation of 25 mm dia electrical grade ISI marked PVC conduit with all conduit accessories etc.	Mtrs.	121			
g	Supply and installation of 32x20mm DLP U-PVC mini trunking system ISI marked with all accessories etc.	Mtrs.	10			
7.00	PART-C LUMINARIES /FITTINGS					
a	Supply and erection of Recessed mounted 26W LED light fixture as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7667	Nos	61			
b	Supply and erection of Recessed mounted 18W LED light fixture as per requirement with necessary fixing hardwares, wires etc. all complete. Equivalent to. K-Lite Cat.No. 7666	Nos	27			
c	Supply and erection of surface mounted Square downlight 16W LED as per requirement with necessary fixing hardwares, wires etc. All complete. Equivalent to. K-Lite Cat.No. 7331	Nos	1			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
d	Supply and erection of suspended type downlight 5W LED as per requirement with necessary fixing hardware, wires etc. All complete. Equivalent to. TISVA JUBILO SP1039	Nos	3			
e	Supply and erection of LED strip light fixture with driver as per requirement with necessary fixing hardware, wires etc. all complete. Equivalent to. Bajaj Cat. No. 25w professional LED strip IP20 WH	Mtrs.	47			
f	Supply & erection of 1200mm ceiling fan suitable for room height with necessary fixing hardware, wires etc. all complete.	Nos	13			
8.00	TELEPHONE, DATA, PAS & ACS FOR SKILL DEVELOPMENT / INCUBATION CENTRE					
8.01	SKILL DEVELOPMENT / INCUBATION CENTRE					
a	Supplying, Erecting, connecting & commissioning of 30 Pair (IDF30P) Krone Connector Type Telephone Main tag Block in 16Gauge Thick sheet steel enclosure.	Nos	1			
b	Supplying, Erecting, connecting & commissioning of 2 pair 0.5 mm un armoured cable	Metre	90			
c	Supplying, Erecting, connecting & commissioning of 3 meter 2 Pair 0.5mm Dia Unarmoured TelephoneCables with both end RJ-11	Metre	9			
d	Suplly and Installation of One no of RJ-45 I/O with face plate and Back Box	Nos	9			
e	Supply and Instalaaion of One no of RJ-45 and One no of RJ-11 with Dual Face plate and Back Box	Nos	9			
f	Supply and installation of WIFI router with accessories	Nos	1			
g	CLIP/Caller ID Anaologue Phones	Nos	8			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
h	Digital Phones with 2line LCD soft touch keys, Programmable soft keys support for hands free head set.	Nos	1			
8.02	RACK FOR NETWORK AND CCTV					
a	Supply erection, connecting & commissioning of 6U rack.	Nos	1			
8.03	NETWORK SWITCH					
a	Supplying, Erecting, connecting & commissioning of 24 Port Patch Panel	Nos	1			
b	Supplying, Erecting, connecting & commissioning of 24 Port Gigabyte Switch (Non PoE)	Nos	1			
c	Supply and installation of Two meters patch cord in patch panel to Network Switch (Rack End)	Nos	18			
d	Supply and installation of Two meters patch cord (USER END)	Nos	18			
e	Supplying, Erecting, connecting & commissioning of cat-6 4 Pair UTP data Cables in 2.0mm thick Heavy duty PVC Conduits already laid in Floor raceway / surface on ceiling. from Network Switch to RJ-45 socket.	Metre	345			
8.04	PVC CONDUITS FOR TELEPHONE/DATA					
	Supplying, Erecting, connecting & commissioning of the following Heavy duty PVC Conduits laid in surface on ceiling / Tray.					
a	32mm. Dia PVC Conduits	Metre	22			
b	25mm. Dia PVC Conduits	Metre	171			
c	Supply and installation of 32x20mm DLP U-PVC mini trunking system ISI marked with all accessories etc.	Metre	18			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
9.00	FOR COMMON AREA - TELEPHONE, DATA, CC TV, PAS & ACS					
9.01	TELEPHONE CABLE & UTP CAT6 CABLE					
a	Supplying, Erecting, connecting & commissioning of 20 Pair 0.5mm Dia Jelly filled Armoured Telephone Cables burried in ground 450mm from FFL, from Main EPABX to Telephone Exchange feeder pillar.	Nos	58			
b	Supplying, Erecting, connecting & commissioning of 30 Pair 0.5mm Dia Jelly filled Armoured Telephone Cables laid in cable tray / PVC Conduit from Admin Block MDF to Skill centre IDF.	Metre	55			
c	Supplying, Erecting, connecting & commissioning of 50 Pair 0.5mm Dia Jelly filled Armoured Telephone Cables laid in cable tray / PVC Conduit from Admin Block MDF to Lab IDF.	Metre	60			
d	Supplying, Erecting, connecting & commissioning of UTP Cat6 Cables laid in PVC conduit from Admin Block 42U Rack to Lab 6U rack..	Metre	60			
e	Supplying, Erecting, connecting & commissioning of UTP Cat6 Cables laid in PVC conduit from Admin Block 42U Rack to Skill centre 6U rack..	Metre	55			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
9.02	PVC CONDUITS					
	Supplying, Erecting, connecting & commissioning of the following Heavy duty PVC Conduits laid in surface on ceiling / Tray.					
a	25mm. Dia PVC Conduits	Metre	115			
10.00	CCTV					
10.01	Supplying, Erecting of 40 Inches LED Color Monitor.	Nos	1			
10.02	Supplying, Erecting of 16 Channel NVR, Third party network camera's supported, Up to 5 Mega pixels resolution recording, HDMI & VGA output upto 1920X1080P resolution, HDD quota & management group, 4/8 independent POE network interfaces.	Nos	1			
10.03	Supplying, Erecting of 4TB Surveillance HDD	Nos	2			
10.04	Supplying, Erecting, connecting & commissioning of cat-6 4 Pair UTP data Cables in 2.0mm thick Heavy duty PVC Conduits already laid in Floor raceway / surface on ceiling. from Network Switch to RJ-45 socket.	Metre	149			
10.05	Supplying, Erecting, connecting & commissioning of RJ 45 Connector	Nos	3			
10.06	Supplying, Erecting, connecting & commissioning of 16 Port Gigabyte Switch (PoE)	Nos	1			
10.07	Supplying, Erecting of EXIR 2MP Fixed Focal Bullet Camera, 1/3" Progressive Scan CMOS, 6mm lens,3D DNR, True Day & Night, Max Resolution: 2048 × 1536,IR Range: 30 meters	Nos	6			
10.08	Supplying, Erecting of EXIR 2MP Fixed Focal external Bullet Camera, 1/3" Progressive Scan CMOS, 6mm lens,3D DNR, True Day & Night, Max Resolution: 2048 × 1536,IR Range: 30 meters	Nos	2			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
10.09	PVC CONDUITS FOR CCTV					
	Supplying, Erecting, connecting & commissioning of the following Heavy duty PVC Conduits laid in surface on ceiling / Tray.					
a	25mm. Dia PVC Conduits	Metre	124			
11.00	PUBLIC ADDRESS SYSTEM					
11.01	6 Zone controller for zone selection	Nos	1.00			
11.02	6W circular ceiling recessed speaker with metallic Grill, high quality type music speakers to be fixed flushed with false ceiling, with complete fixing accessories.	Nos	35.00			
11.03	12W wall mounted speaker with metallic Grill, high quality type music speakers to be fixed flushed with false ceiling, with complete fixing accessories.	Nos	4.00			
11.04	480 Watts power Amplifier unit with Mic. Inputs, control wires, power cables, etc as required.	Nos	1.00			
11.05	Table mounted type with goose neck mike, necessary fixing & connecting accessories.	Nos	1.00			
11.06	Supply and laying, connecting & commissioning of 2C x 1.5 sq.mm, Stranded Copper conductor, FRLS Cable 650 V as per IS 1554.	mts	348.00			
11.07	supply and installation of 25MM PVC conduit with accessories such as junction boxes, bends, etc., concealed in wall / ceiling.	mts	286.00			
11.08	suitable floor Mountable powder coated Rack with 6x5A Power Manager, 2 Horizontal Cable Manager, 4 position fan, min 1 nos of shelf, Front Glass door with Lock & key for PA system	Nos	1.00			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
12.00	ACCESS CONTROL SYSTEM					
12.01	Supply, Installation, Testing and Commissioning of Proximity Readers for access door.	Nos.	8			
	Biometric Attendance					
12.02	Supply, Installation, Testing and Commissioning of Biometric Attendance System (Fingerprint) Networkable, 32 bit processor, 5000 card holder capacity and 10000 event memory	Nos.	4			
	Locks and Accessories					
12.03	Supply and Commissioning of Double Leaf Electromagnetic locks for Access Control System with necessary hardware as specified for centralized security monitoring - suitable for double door	Nos.	5			
12.04	Supply and Commissioning of Single Leaf Electromagnetic locks for Access Control System with necessary hardware as specified for centralized security monitoring - suitable for double door	Nos.	1			
12.05	Supply Installation, Testing and Commissioning of Exit Switch for door access	Nos.	3			
12.06	Supply and testing of Access Cards (approxmate)	Nos.	100			
12.07	Supply and Cabling of UTP Cat6 cable for Door Access Controller, Exit Reader, Exit switch, Door Locks and Emergency door release.	Mtrs.	84			
12.08	25mm PVC Conduit with accessories for Public address system control Cable.	Mtrs.	82			
	Grand Total (Bill No.10):					

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Bill No.11 - HVAC work for Administrative/Business Centre and Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I.	ADMINISTRATIVE/BUSINESS CENTRE:					
	VRF UNITS - R410A					
1.00	Supply, installation, testing & commissioning of VARIABLE REFRIGERANT FLOW/VOLUME SYSTEM of below mentioned capacities comprising of COMPLETE INVERTER & Scroll Compressor and complete with the following, Scope of work includes necessary vibration isolators, Ms supports, bolts, nuts, anchoring, brazings for both indoor and outdoor units, lifting shifting & positioning of both indoor and outdoor units.					
1.01	Out door machine - 32HP(14+18HP)	1	Nos.			
1.02	Refnet for the above	1	Lot			
1.03	Supply and instalton of exposed copper pipe needs to protected -including of PVC pipe 4kg/cm2 and GI outer cover Try with required supports	10	Rmt			
1.04	Supply and instalton of wireless Remote Controller for indoor unit operation	13	Nos.			
1.05	Supply and instalton of Cassette Unit-1.28TR or equalant capacity, cooling capacity.	1	Nos.			
1.06	Supply and instalton of Cassette Unit-1.59TR or equalant, cooling capacity.	3	Nos.			
1.07	Supply and instalton of Cassette Unit-2.02TR or equalant, cooling capacity.	4	Nos.			
1.08	Supply and instalton of Cassette Unit-2.27TR or equalant, cooling capacity.	4	Nos.			
1.09	Supply and instalton of Cassette Unit-3.98TR or equalant, cooling capacity.	1	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.10	Supply and instalation of Central Control system - Maximum 64 groupes of indoor units should be controlled individually, and must have zone control, malfunction code display, unified on/off controller, schedule timers.	1	Nos.			
1.11	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc., for communication control between indoor units and Central remote unit					
a	2Cx1.0 Sqmm Cu. Wire	176	Rmt			
1.12	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc.,					
a	4Cx16 Sqmm Cu. Wire	5	Rmt			
b	4Cx10 Sqmm Cu. Wire	5	Rmt			
1.13	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	45	Nos.			
1.14	Supply, installation and commissioning of perforated cable tray with required supports, angles, hangers, bolts & nuts.					
a	150 mm wide	75	Rmt			
1.15	Supply and installation of double 16G Earthing Strip for motor body earth, scope of work includes running the earthing strip / wire from the body to main earth strips.	20	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
1.16	Supply and installation of MS, hangers, supports, angle supports for pipes, indoor units and out door units, brazings as shown in the layout, etc., including two coat epoxy enamel paint	50	Kg			
	COPPER PIPING - INTERNAL, EXTERNAL & CABLING					
2.00	Supply and installation of Hardened 19G-21G copper pipes suitable for welding, pressure testing, vaccumising, flushing, charging R410A refrigerant gas, with necessary insulations with fire glass run around FRP cloth, slot angle supports, polysheild coatings for pipes.					
2.01	41.3mm OD with insulation of 19mm thick for suction & 13mm for liquid line	10	Rmt			
2.02	34.9mm OD with insulation of 19mm thick for suction & 13mm for liquid line	10	Rmt			
2.03	31.8mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
2.04	28.6mm OD with insulation of 19mm thick for suction & 13mm for liquid line	37	Rmt			
2.05	25.4mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
2.06	22.2mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
2.07	19.1mm OD with insulation of 19mm thick for suction & 13mm for liquid line	15	Rmt			
2.08	15.9mm OD with insulation of 19mm thick for suction & 13mm for liquid line	37	Rmt			

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				In Figures	In Words	
2.09	12.7mm OD with insulation of 19mm thick for suction & 13mm for liquid line	15	Rmt			
2.10	9.5mm OD with insulation of 19mm thick for suction & 13mm for liquid line	47	Rmt			
2.11	6.4mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
2.12	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-40mm with necessary U traps near the indoor units.	11	Rmt			
2.13	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-32mm with necessary U traps near the indoor units.	22	Rmt			
2.14	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-25mm with necessary U traps near the indoor units.	41	Rmt			
2.15	Supply, instalation,testing and commissioning of Indigenous equipment including topping up of Refrigerant R-410A	1	Lot			
	AIR CONDITION LOW SIDE WORK					
3.00	Supply and installation of SMACNA standard, factory fabricated, flanged GI ducting,120GSM, 500pa, using food grade sealant for leakage arresting, wall to wall duct crossing area to be sealed with fire retardant sealent, built-in sealant, neoprene gaskets, GI metal cleats, turning vanes, Electro-galvanized bolts, nuts & washers, GI suspension rods, anchor grip bolts, supports for ducts.					
3.01	22G	10	Sqmt			
3.02	24G	215	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
3.03	Metallized core fire rated flexible ducts with totally encapsulated helically wound spring wire. The flexible duct shall consists of outer and inner jacket with 16 kg/cum density, 25 mm thick fibre glass insulation in the middle. The price quoted shall include supports for the flexible duct. The diameter of the duct shall be as under:					
a	Circular Clamps for fixing flexible duct to GI ducts and diffuser box.	48	Nos			
b	100 dia - 1.5 mtr length	40	Rmt			
3.04	Supply and installation of Duct Thermal Insulation materials constructed by laminating a closed cell, cross linked polyethylene foam with tough re inforced aluminum foil facing of 19 mm thick insulation for SA/RA duct passing through the Conditioned space, Class O standards, thermal conductivity 0.032 w/m k(20 deg c ,50-70% R.H)	105	Sqmt			
3.05	Supply, installation and commissioning of Duct Accoustic (Nitrile rubber base, Open cell material 25mm thick, Thermal conductivity, 0.047w/m.k @20deg C, excellent absorption, 99.9% reduction of bacterial growth, class1 fire performance, with a density of 140-180Kg/cubicmeter)	17	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
3.06	Supply, Installation, Testing and commissioning of Double skin outdoor mounted type Heat recovery unit made of 50mm thick panels consisting of GI casing of thickness 0.63mm outside layer and 0.63mm inside layer with factory injected PUF insulation, Supply & Return air Centrifugal blower(Forward curved/backward curved)sections with aerofoil constructions, Heat recovery wheel section, belt drive packages with TEFC motor suitable for operation on 415 +/- 10% volts, 50 Hz, 3 phase, A.C. power supply, Fresh air Pre-filter section, Heat recovery descicant wheel, Fresh air, return air & exhaust air dampers with suitable actuator with a provision for CO2 signal sensing,CO2 sensors with wiring to be included for each unit and all the necessary accessories, necessary vibration isolators and complete as per specifications. The duties of equipments listed below and accessories shall be as per equipment schedule. Heat recovery wheel efficiency should not be less than 75%. Unit shall be with VFD and with suitable bypass starter and BMS compatible and as per specifications					
a	735 Cfm Fresh air and Exhaust against a static pressure of 50 mm WG having suitable drive motors	1	Nos.			

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3.07	Supply, installation , testing and commissioning of Variable Frequency drives, IP55 protection, disconnect switch. UL, CE certified, 5% non-saturating dual reactors on both rails of DC bus. Swinging chokes which do not provide full harmonic filtering throughout the entire load range are not acceptable. VFDs with saturating (non linear) DC reactors to provide additional 3% AC chokes, IBMS compatible.					
a	7.5kw	1	Nos.			
	VENTILATION FANS					
4.00	Supply, installation, testing and commissioning of Ductable inline fan with single skin insulated panel, Fresh air/Exhaust air, fan Air flow capacity, Noise level of fan should not be more than 65 db(A) @ 1.5m, cables from motor to socket with required cables, plug top, end terminations, glands, crimpings, rmt of cable from the socket to the fan 3rmt, angle supports & hangers, proper fixing with fire rated canvas with the ducts.					
4.01	1000cfm, ext static of 25mmWg Inline fan - for pantry.	1	Nos.			
4.02	1100cfm, ext static of 25mmWg Inline fan - for toilet fresh air fan	1	Nos.			
4.03	1400cfm, ext static of 25mmWg Inline fan - for toilet exhaust air fan	1	Nos.			
4.04	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	15	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
4.05	Volume Control Dampers of GSS blades, channels, flanges for duct mounting, operating handle, etc.	2	Sqmt			
4.06	Supply and instalton of Disc value/grilles size	2	Sqmt			
4.07	Supply and installation of al.powerderd coated exhaust louver	1	Sqmt			
4.08	Supply and instalation of Fire rated canvas for ductable fan mouth connection	6	Sqmt			
4.09	Supply and installation of CAV -150cfm	1	Nos.			
4.10	Supply and installation of CAV -900cfm	1	Nos.			
4.11	Required wall opening/chasing of copper pipe/cable try entry and civil closing of using fire retratent materials for the same	1	Lot			
II.	SKILL DEVELOPOMENT/INCUBATION CENTRE					
	VRF UNITS - R410A					
5.00	Supply, installation, testing & commissioning of VARIABLE REFRIGERANT FLOW/VOLUME SYSTEM of below mentioned capacities comprising of COMPLETE INVERTER & Scroll Compressor and complete with the following, Scope of work includes necessary vibration isolators, Ms supports, bolts, nuts, anchoring, brazings for both indoor and outdoor units, lifting shifting & positioning of both indoor and outdoor units.					
5.01	Out door machine - 32HP(14+18HP)	1	Nos.			
5.02	Refnet for the above	1	Lot			
5.03	Supply and instalton of exposed copper pipe needs to protected -including of PVC pipe 4kg/cm2 and GI outer cover Try with required supports	10	Rmt			
5.04	Supply and instalton of Mini Aqua FP2406 - Drain Pump.	5	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
5.05	Supply and instalation of wireless Remote Controller for indoor unit operation	12	Nos.			
5.06	Supply and instalation of Cassette Unit-1.59TR or equalant, cooling capacity.	1	Nos.			
5.07	Supply and instalation of Cassette Unit-2.02TR or equalant, cooling capacity.	2	Nos.			
5.08	Supply and instalation of Cassette Unit-2.56TR or equalant, cooling capacity.	2	Nos.			
5.09	Supply and instalation of Cassette Unit-3.18TR or equalant, cooling capacity.	4	Nos.			
5.10	Supply and instalation of Cassette Unit-3.98TR or equalant, cooling capacity.	1	Nos.			
6.00	DX-UNITS					
	Supply, installation testing and commissioing of factory built DX unit. It should have a thermostat contlol. The ductable split units shall be complete with outdoor units, required valves, piping works with insulation approx distance 15mtr, supports for the pipes, outdoor machines, rubber pads, and 25mm dia Heavy grade insulated PVC Drain piping (20 Rmt per unit) and neccessary supports to hold the outdoor and indoor units. The suitable disconnect switch, cables shall be clamped at a regular intervals using necessary GI clamps apprx 20 rmt and fasteners. End terminations and Earthing work as per I.E regulations for the above power wiring. Copper Earthing for all the equipment, switch boards, switches.					
6.01	High wall split Unit -2TR, cooling capacity, single booster Stablizer for above High wall split Units. with remote control & drain pump - ATM,Shop1,Shop2 & Telecommunication.	5	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
6.02	Supply and instalation of Central Control system - Maximum 64 grouperes of indoor units should be controlled individually, and must have zone control, malfunction code display, unified on/off controller, schedule timers.	1	Nos.			
6.03	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc., for communication control between indoor units and Central remote unit					
a	2Cx1.0 Sqmm Cu. Wire	170	Rmt			
6.04	Supply and installation of un armoured copper cables with necessary PVC conduits, end terminations, crimpings, glands, clampings, cables ties, etc.,					
a	4Cx16 Sqmm Cu. Wire	5	Rmt			
b	4Cx10 Sqmm Cu. Wire	5	Rmt			
6.05	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	45	Nos.			
6.06	Supply, installation and commissioning of perforated cable tray with required supports, angles, hangers, bolts & nuts.					
a	150 mm wide	100	Rmt			
6.07	Supply and installation of double 16G Earthing Strip for motor body earth, scope of work includes running the earthing strip / wire from the body to main earth strips.	20	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
6.08	Supply and installation of MS, hangers, supports, angle supports for pipes, indoor units and out door units, brazings as shown in the layout, etc., including two coat epoxy enamel paint	50	kg			
	COPPER PIPING - INTERNAL, EXTERNAL & CABLING					
7.00	Supply and installation of Hardened 19G-21G copper pipes suitable for welding, pressure testing, vaccumising, flushing, charging R410A refrigerant gas, with necessary insulations with fire glass run around FRP cloth, slot angle supports, polysheild coatings for pipes.					
7.01	41.3mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
7.02	34.9mm OD with insulation of 19mm thick for suction & 13mm for liquid line	17	Rmt			
7.03	31.8mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
7.04	28.6mm OD with insulation of 19mm thick for suction & 13mm for liquid line	8	Rmt			
7.05	25.4mm OD with insulation of 19mm thick for suction & 13mm for liquid line	5	Rmt			
7.06	22.2mm OD with insulation of 19mm thick for suction & 13mm for liquid line	12	Rmt			
7.07	19.1mm OD with insulation of 19mm thick for suction & 13mm for liquid line	22	Rmt			
7.08	15.9mm OD with insulation of 19mm thick for suction & 13mm for liquid line	42	Rmt			
7.09	12.7mm OD with insulation of 19mm thick for suction & 13mm for liquid line	13	Rmt			
7.10	9.5mm OD with insulation of 19mm thick for suction & 13mm for liquid line	53	Rmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
7.11	6.4mm OD with insulation of 19mm thick for suction & 13mm for liquid line	10	Rmt			
7.12	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-40mm with necessary U traps near the indoor units.	22	Rmt			
7.13	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-32mm with necessary U traps near the indoor units.	20	Rmt			
7.14	Supply and installation of Heavy duty PVC pipe with 6mm nitrile rubber, Insulated Condensate Drain piping-25mm with necessary U traps near the indoor units.	42	Rmt			
7.15	Supply, instalation,testing and commissioning of Indigenous equipment including topping up of Refrigerant R-410A	1	Lot			
	AIR CONDITION LOW SIDE WORK					
8.00	Supply and installation of SMACNA standard, factory fabricated, flanged GI ducting,120GSM, 500pa, using food grade sealant for leakage arresting, wall to wall duct crossing area to be sealed with fire retardant sealent, built-in sealant, neoprene gaskets, GI metal cleats, turning vanes, Electro-galvanized bolts, nuts & washers, GI suspension rods, anchor grip bolts, supports for ducts.					
8.01	22G	2.1	Sqmt			
8.02	24G	180	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
8.03	Metallized core fire rated flexible ducts with totally encapsulated helically wound spring wire. The flexible duct shall consists of outer and inner jacket with 16 kg/cum density, 25 mm thick fibre glass insulation in the middle. The price quoted shall include supports for the flexible duct. The diameter of the duct shall be as under:					
a	Circular Clamps for fixing flexible duct to GI ducts and diffuser box.	18	Nos			
b	100 dia - 1.5 mtr length	27	Rmt			
8.04	Supply and installation of Duct Thermal Insulation materials constructed by laminating a closed cell, cross linked polyethylene foam with tough re inforced aluminum foil facing of 19 mm thick insulation for SA/RA duct passing through the Conditioned space, Class O standards, thermal conductivity 0.032 w/m k(20 deg c ,50-70% R.H)	102	Sqmt			
8.05	Supply, installation and commissioning of Duct Accoustic (Nitrile rubber base, Open cell material 25mm thick, Thermal conductivity, 0.047w/m.k @20deg C, excellent absorption, 99.9% reduction of bacterial growth, class1 fire performance, with a density of 140-180Kg/cubicmeter)	17	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
8.06	Supply, Installation, Testing and commissioning of Double skin outdoor mounted type Heat recovery unit made of 50mm thick panels consisting of GI casing of thickness 0.63mm outside layer and 0.63mm inside layer with factory injected PUF insulation, Supply & Return air Centrifugal blower(Forward curved/backward curved)sections with aerofoil constructions, Heat recovery wheel section, belt drive packages with TEFC motor suitable for operation on 415 +/- 10% volts, 50 Hz, 3 phase, A.C. power supply, Fresh air Pre-filter section, Heat recovery descicant wheel, Fresh air, return air & exhaust air dampers with suitable actuator with a provision for CO2 signal sensing,CO2 sensors with wiring to be included for each unit and all the necessary accessories, necessary vibration isolators and complete as per specifications. The duties of equipments listed below and accessories shall be as per equipment schedule. Heat recovery wheel efficiency should not be less than 75%. Unit shall be with VFD and with suitable bypass starter and BMS compatible and as per specifications					
a	783 Cfm Fresh air and Exhaust against a static pressure of 50 mm WG having suitable drive motors	1	Nos.			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
8.07	Supply, installation , testing and commissioning of Variable Frequency drives, IP55 protection, disconnect switch. UL, CE certified, 5% non-saturating dual reactors on both rails of DC bus. Swinging chokes which do not provide full harmonic filtering throughout the entire load range are not acceptable. VFDs with saturating (non linear) DC reactors to provide additional 3% AC chokes, IBMS compatible.					
a	7.5kw	1	Nos.			
	VENTILATION FANS					
9.00	Supply, installation, testing and commissioning of Ductable inline fan with single skin insulated panel, Fresh air/Exhaust air, fan Air flow capacity, Noise level of fan should not be more than 65 db(A) @ 1.5m, cables from motor to socket with required cables, plug top, end terminations, glands, crimpings, rmt of cable from the socket to the fan 3rmt, angle supports & hangers, proper fixing with fire rated canvas with the ducts.					
9.01	900cfm, ext static of 25mmWg Inline fan.	1	Nos.			
9.02	1000cfm, ext static of 25mmWg Inline fan.	1	Nos.			
9.03	1100cfm, ext static of 25mmWg Inline fan.	1	Nos.			
9.04	Supply and installation of un armoured copper cables & 3 pin plug top for each indoor unit, with necessary PVC conduits, end terminations, crimpings, glands, wall clampings, cables ties, etc.,					
a	3Cx2.5 Sqmm Cu. Wire, 3 rmt, with plug top	15	Rmt			
9.05	Volume Control Dampers of GSS blades, channels, flanges for duct mounting, operating handle, etc.	2	Sqmt			
9.06	Supply and instalation of Disc value/grilles size	2	Sqmt			

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Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
9.07	Supply and installation of al.powerderd coated exhaust louver	1	Sqmt			
9.08	Supply and instalation of Fire rated canvas for ductable fan mouth connection	6	Sqmt			
9.09	Supply and installation of CAV -150cfm	1	Nos.			
9.10	Supply and installation of CAV -900cfm	1	Nos.			
9.11	Required wall opening/chasing of copper pipe/cable try entry and civil closing of using fire retratent materials for the same	1	Lot			
	Grand Total (Bill No.11):					

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.12 - Fire Alarm System for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
I	FIRE ALARM SYSTEM FOR ADMIN/BUSINESS CENTRE BUILDING :					
1	Supply, installation, testing & commissioning of 8 Zone conventional fire alarm Panel which consists of 16x2 dot matrix LCD display. Approval UL Listed, Make. The panel shall have 240 Volts AC Power supply, automatic battery charger, 24V, sealed maintenance free batteries sufficient for 48 hours normal working and then be capable of operating the system for 30min during emergency condition as required. The scope of work includes, dressing of fire alarm cables with neat encasing from ceiling to the fire alarm panel.	Nos	1			
2	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	14			
3	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Above ceiling detectors.	Nos	12			
4	Supply and Installation of Conventional Response Indicator twin LED flush mounted on false ceiling only Plate Type.	Nos	12			

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Tender for Construction of New Building for EMI/EMC Lab, Administrative /Business Centre, Skill Development /Incubation Centre for Medipark, Chengalpattu, Kancheepuram district, Tamil Nadu						
Bill No.12 - Fire Alarm System for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
5	Supply, installation, testing & commissioning of fixed temperature and rate of rise heat detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	1			
6	Supply, installation, testing & commissioning of coventional Manual Call Point - Resettable type	Nos	2			
7	Supply,Installation, Testing & Commissioning of Supply of Conventional type Horn / Strobe wall mounted type rated at 90 dBA @ 1m for Audible annunciation and 15cd minimum flashing at 1 Hz for visual indication.	Nos	2			
8	Supply and laying, connecting, testing & commissioning of 2C x 1.5 sq.mm, Ar Copper conductor, FRLS Cable. The scope of work includes necessary clamps, supports & fixings for the cables in concealed walls, exposed walls, Iron Beams, civil structures, etc.,	RMT	195			
II	FIRE ALARM SYSTEM FOR SKILL DEVELOPMENT / INCUBATION CENTRE :					
9	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	16			
10	Supply, installation, testing & commissioning of Conventional Smoke detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Above ceiling detectors.	Nos	13			

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Bill No.12 - Fire Alarm System for Administrative/Business Centre And Skill Development/Incubation Centre						
Sl.No.	Description of Item	Unit	Quantity	Rate (Rs.)		Total Amount
				In Figures	In Words	
11	Supply and Installation of Conventional Response Indicator twin LED flush mounted on false ceiling only Plate Type.	Nos	13			
12	Supply, installation, testing & commissioning of fixed temperature and rate of rise heat detector. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42. Approval: UL Listed Make with standard base and junction box, Below ceiling detectors.	Nos	1			
13	Supply, installation, testing & commissioning of coventional Manual Call Point - Resettable type	Nos	1			
14	Supply,Installation, Testing & Commissioning of Supply of Conventional type Horn / Strobe wall mounted type rated at 90 dBA @ 1m for Audible annunciation and 15cd minimum flashing at 1 Hz for visual indication.	Nos	1			
15	Supply and laying, connecting, testing & commissioning of 2C x 1.5 sq.mm, Ar Copper conductor, FRLS Cable. The scope of work includes neccessary clamps, supports & fixings for the cables in concealed walls, exposed walls, Iron Beams, civil structures, etc.,	Mts	210			
	Grand Total (Bill No.12):					