

# Schedule of Rates for Electrical Works for 2021-22

SR 2019-20

SR 2022-23

## Chapter - 1 PVC CONDUITS & ACCESSORIES

1.0	PVC CONDUIT & ITS ACCESSORIES			
1.1	<b>Open Conduit System</b>			
	Supplying heavy gauge PVC conduit pipe ..... dia ..... mm thick confirming to IS 2509 with suitable size bends, junction boxes, adhesive paste etc , and fixing using inverted wood plugs in case of RCC ceiling and RCC wall/ stone structure or rawl plugs in case of brick walls and cement plastering the damaged portion using heavy gauge saddles at an interval of 700mm using NF screws.			
1.1.1	19/20 mm dia 2 mm thick	m	50.00	<b>68.00</b>
1.1.2	25 mm dia 2 mm thick	m	65.00	<b>80.00</b>
1.1.3	32 mm dia 2.5 mm thick	m	92.00	<b>100.00</b>
1.1.4	40 mm dia 2.5 mm thick	m	105.00	<b>113.00</b>
1.2	<b>Concealed Conduit System</b>			
	Supplying heavy gauge PVC conduit pipe ..... mm dia.....mm thick confirming to IS 2509 with suitable size bends, metal/PVC Junction boxes, adhesive paste etc., and running before concreting the slab. The conduit should be tied to the reinforcement rods by using binding wires and unused ways of junction boxes and pipe ends should be covered using PVC end enclosures, run with 18SWG GI fish wire wherever necessary			
1.2.1	19/20 mm dia 2 mm thick	m	40.00	<b>61.00</b>
1.2.2	25 mm dia 2 mm thick	m	53.00	<b>70.00</b>
1.2.3	32 mm dia 2.5 mm thick	m	83.00	<b>93.00</b>
1.2.4	40 mm dia 2.5 mm thick	m	95.00	<b>106.00</b>
1.3	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary.			
1.3.1	19/20 mm dia 2 mm thick	m	51.00	<b>75.00</b>
1.3.2	25 mm dia 2 mm thick	m	54.00	<b>80.00</b>
1.3.3	32 mm dia 2.5 mm thick	m	81.00	<b>105.00</b>
1.3.4	40 mm dia 2.5 mm thick	m	93.00	<b>119.00</b>
1.4	Supplying and fixing sheet Metal box made out of 18 SWG sheet metal with necessary holes for cable/conduit entry as required with one coat of primer of approved make etc.			
1.4.1	75 x 75 x 65 mm	Each	87.00	<b>100.00</b>
1.4.2	100 x 75 x 65 mm	Each	88.00	<b>112.00</b>
1.4.3	135 x 75 x 65 mm	Each	95.00	<b>131.00</b>
1.4.4	180 x 90 x 65 mm	Each	102.00	<b>155.00</b>
1.4.5	200 x 90 x 65 mm	Each	111.00	<b>169.00</b>
1.4.6	135 x 160 x 65 mm	Each	109.00	<b>196.00</b>
1.4.7	200 x 200 x 65 mm	Each	145.00	<b>335.00</b>
1.5	Supplying and fixing PVC/metal conduit Deep junction box			
1.5.1	19/20 mm deep Junction box	Each	43.00	<b>49.00</b>
1.5.2	25 mm deep Junction box	Each	47.00	<b>51.00</b>
1.5.3	32 mm deep Junction box	Each	60.00	<b>69.00</b>

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<b>1.6</b>	Supplying and flush mounting teak wooden box without front plank, made of not less than 12 mm thick wood, after due groove cutting, finishing with necessary cement plastering complete.			
1.6.1	12" x 12" x 3" (300 x 300 x 76 mm)	Each	102.00	<b>112.00</b>
1.6.2	12" x 9" x 3" (300 x 228 x 76 mm)	Each	86.00	<b>105.00</b>
1.6.3	10" x 7" x 3" (254 x 178 x 76 mm)	Each	77.00	<b>101.00</b>
1.6.4	8" x 6" x 3" (203 x 152 x 76 mm)	Each	64.00	<b>75.00</b>
1.6.5	4" x 4" x 3" ( 101 x 101 x 76 mm)	Each	60.00	<b>69.00</b>
1.6.6	1 to 2 Way	Each	33.00	<b>38.00</b>
1.6.7	3 to 4 Way	Each	40.00	<b>44.00</b>
1.6.8	5 to 6 Way	Each	45.00	<b>48.00</b>
<b>1.7</b>	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete.			
1.7.1	upto 50 mm conduit in brick wall	m	21.00	<b>26.00</b>
1.7.2	upto 50 mm conduit CC floor	m	38.00	<b>62.00</b>
<b>1.8</b>	Supplying and fixing of PVC casing and capping on the wall or ceiling using necessary materials like bends, junction box, elbows, screws at an interval of 300 mm .... etc. as required.			
1.8.1	20 mm	m	22.00	<b>27.00</b>
1.8.2	25 mm	m	24.00	<b>28.00</b>
1.8.3	32 mm	m	33.00	<b>41.00</b>
1.8.4	38 mm	m	36.00	<b>42.00</b>
1.8.5	50 mm	m	40.00	<b>44.00</b>
<b>1.9</b>	Supplying PVC/GI flexible conduit pipe .... mm dia fixing on surface over inverted tapered wooden plugs or phill plugs or rawl plugs and clamped using heavy gauge saddles at an interval of 300 mm using NF screws and on either end of the pipe terminated completely			
1.9.1	20 mm	m	22.00	<b>25.00</b>
1.9.2	25 mm	m	28.00	<b>31.00</b>
1.9.3	32 mm	m	35.00	<b>41.00</b>
1.9.4	38 mm	m	44.00	<b>45.00</b>
1.9.5	50 mm	m	54.00	<b>62.00</b>
1.10	Supplying And Fixing "S" Hook made out of 14 mm dia M.S. Rod.	No	34.00	<b>43.00</b>
1.11	Supplying And Fixing M.S. Rafter Clamp Set made out of M.S. Flat & 14 mm M.S. rod.	No	77.00	<b>159.00</b>
1.12	Supplying And Fixing Metal Fan Box with Round Hook.	No	85.00	<b>163.00</b>
<b>Chapter - 2</b>				
<b>WIRES &amp; CABLES</b>				
<b>2.0</b>	<b>WIRES &amp; CABLES</b>			
	<b>Point wiring using Copper wire with switch.</b>			
2.1	Supplying and wiring adopting loop system in existing PVC Conduit /casing capping using 2x1.5mm <sup>2</sup> (Phase & Neutral) & 1x1.0 mm <sup>2</sup> (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) with a 6A flush type SP control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet.			
2.1.1	Short point upto 3m from tapping point to out let via switch	Point	200.00	<b>276.00</b>

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2.1.2	Medium point above 3m upto 6m from tapping point to out let via switch	Point	275.00	<b>386.00</b>
2.1.3	Long point above 6m upto 10m from tapping point to out let via switch	Point	400.00	<b>567.00</b>
2.1.4	Two outlet in a row, above 3m upto 6m from tapping point to out let via switches.	Point	525.00	<b>721.00</b>
2.1.5	Three outlet in a row, above 6m upto 10m from tapping point to out let via switches	Point	750.00	<b>1054.00</b>
<b>Point wiring using Copper wire without switch.</b>				
2.2	Supplying and wiring adopting loop system in existing PVC Conduit /casing capping casing capping using 2x1.5mm <sup>2</sup> (Phase & Neutral) & 1x1.0 mm <sup>2</sup> (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet.			
2.2.1	Short point upto 3m from tapping point to out let via switch box	Point	160.00	<b>251.00</b>
2.2.2	Medium point above 3m upto 6m from tapping point to out let via switch box	Point	250.00	<b>361.00</b>
2.2.3	Long point above 6m upto 10m from tapping point to out let via switch box	Point	375.00	<b>542.00</b>
2.2.4	Two outlet in a row, above 3m upto 6m from tapping point to out let via switches	Point	475.00	<b>671.00</b>
2.2.5	Three outlet in a row, above 6m upto 10m from tapping point to out let via switches box	Point	675.00	<b>979.00</b>
2.3	Wiring for lighting/power circuit using one of <b>FRLS</b> PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:confirming to latest amendments.			
2.3.1	1 mm <sup>2</sup>	m	14.00	<b>18.00</b>
2.3.2	1.5 mm <sup>2</sup>	m	20.50	<b>26.00</b>
2.3.3	2.5 mm <sup>2</sup>	m	32.00	<b>40.00</b>
2.3.4	4 mm <sup>2</sup>	m	45.00	<b>59.00</b>
2.3.5	6 mm <sup>2</sup>	m	70.00	<b>87.00</b>
2.3.6	10 mm <sup>2</sup>	m	115.00	<b>157.00</b>
2.3.7	16 mm <sup>2</sup>	m	188.00	<b>318.00</b>
	The following additional tests are compulsory either to be conducted at works or independent lab with witness by inspecting authority.			
<b>Additional Tests for FRLS-Applicable Standard</b>				
Oxygen Index -IS 694-2010, Clause 16.8				
Temperature Index -IS 694-2010, Clause 16.13				
Smoke Density -IS 694-2010, Clause 16.14				
Test for Halogen Acid Gas evaluation -IS 694-2010, Clause 16.12				
2.4	Supplying and drawing PVC insulated flexible copper wire of approved make.			
2.4.1	14/0 0040"	m	7.00	<b>17.00</b>
2.4.2	23/0.0040"	m	9.00	<b>18.00</b>
2.4.3	40/0.0040"	m	15.00	<b>25.00</b>
2.4.4	14/0.0052"	m	8.50	<b>18.00</b>
2.4.5	23/0.0052"	m	11.00	<b>19.00</b>
2.4.6	30/0.0052"	m	14.00	<b>27.00</b>

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2.4.7	40/0.0052"	m	18.00	<b>22.00</b>
2.4.8	70/0.0052"	m	25.00	<b>26.00</b>
2.4.9	110/0.0052"	m	38.00	<b>41.00</b>
2.5	Supplying and drawing Flexible Multicore Cable manufactured with electrolytic grade flexible copper with low conductor confirming to IS 8130-1984 and (Virgin) PVC insulation sheathed suitable for working voltage upto 1100V as per IS-694:2010			
2.5.1	2C X 1.5 mm <sup>2</sup>	m	40.00	<b>50.00</b>
2.5.2	3C X 1.5 mm <sup>2</sup>	m	55.00	<b>69.00</b>
2.5.3	4C x 1.5 mm <sup>2</sup>	m	65.00	<b>88.00</b>
2.5.4	6C x 1.5 mm <sup>2</sup>	m	130.00	<b>112.00</b>
2.5.5	8C x 1.5 mm <sup>2</sup>	m	170.00	<b>158.00</b>
2.5.6	10C x 1.5 mm <sup>2</sup>	m	220.00	<b>185.00</b>
2.5.7	2C x 2.5 mm <sup>2</sup>	m	70.00	<b>79.00</b>
2.5.8	3C x 2.5 mm <sup>2</sup>	m	90.00	<b>109.00</b>
2.5.9	4C x 2.5 mm <sup>2</sup>	m	115.00	<b>141.00</b>
2.5.10	5C x 2.5 mm <sup>2</sup>	m	145.00	<b>124.00</b>
2.5.11	6C x 2.5 mm <sup>2</sup>	m	230.00	<b>196.00</b>
2.5.12	8C x 2.5 mm <sup>2</sup>	m	325.00	<b>274.00</b>
2.5.13	10C x 2.5 mm <sup>2</sup>	m	362.00	<b>301.00</b>
2.5.14	2C x 4 mm <sup>2</sup>	m	80.00	<b>136.00</b>
2.5.15	3C x 4 mm <sup>2</sup>	m	100.00	<b>119.00</b>
2.5.16	4C x 4 mm <sup>2</sup>	m	135.00	<b>158.00</b>
2.5.17	5C x 4 mm <sup>2</sup>	m	165.00	<b>216.00</b>
2.5.18	6C x 4 mm <sup>2</sup>	m	190.00	<b>259.00</b>
2.5.19	8C x 4 mm <sup>2</sup>	m	225.00	<b>297.00</b>
2.5.20	10C x 4 mm <sup>2</sup>	m	350.00	<b>468.00</b>
2.5.21	2C x 6 mm <sup>2</sup>	m	125.00	<b>179.00</b>
2.5.22	3C x 6 mm <sup>2</sup>	m	175.00	<b>235.00</b>
2.5.23	4C x 6 mm <sup>2</sup>	m	225.00	<b>297.00</b>
2.5.24	5C x 6 mm <sup>2</sup>	m	295.00	<b>402.00</b>
2.5.25	6C x 6 mm <sup>2</sup>	m	375.00	<b>441.00</b>
2.6	Supplying and drawing 3 core flat PVC sheathed submersible pump cable manufactured with electrolytic grade copper with flexible copper with low resistance conductor confirming to IS:8130-1984 and virgin grade PVC insulation and powder coating extruded PVC sheathed suitable for working voltage upto 1100 V as per IS-694:2010.			
2.6.1	3C x 1.5 mm <sup>2</sup>	m	60.00	<b>72.00</b>
2.6.2	3C x 2.5 mm <sup>2</sup>	m	98.00	<b>113.00</b>
2.6.3	3C x 4 mm <sup>2</sup>	m	140.00	<b>167.00</b>
2.6.4	3C x 6 mm <sup>2</sup>	m	205.00	<b>242.00</b>
2.6.5	3C x 10 mm <sup>2</sup>	m	315.00	<b>405.00</b>
<b>Chapter - 3</b>				
<b>SWITCHES, SOCKETS &amp; ACCESSORIES</b>				
<b>3.0</b>	<b>SWITCHES, SOCKETS &amp; ACCESSORIES</b>			

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3.1	Supplying 6A flush type socket and 6 A flush type SP switch either surface/flush mounting in existing gang box or in 4mm thick plastic sheet and fixing over a flush mounted wooden box and wiring using necessary capacity wires as required as per IS 1293 and IS 3654			
3.1.1	6A 2 Way	Each	112.00	<b>121.00</b>
3.1.2	6A 3/5 Way	Each	132.00	<b>143.00</b>
3.2	Supplying and mounting 2 Nos. of 2Way 6 A flush type switches either surface/flush mounted on existing gang box or in 4mm thick plastic sheet and mounted on a flush mounted wooden box and wiring as per IS 1293	Each	150.00	<b>162.00</b>
3.3	Supplying and fixing surface/flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick/C.C wall, including necessary rawl plugs, Machine/NF screws etc., complete.			
3.3.1	1-3 Way	Each	85.00	<b>91.00</b>
3.3.2	4-5 Way	Each	103.00	<b>122.00</b>
3.3.3	6 Way	Each	115.00	<b>149.00</b>
3.3.4	8 Way	Each	140.00	<b>195.00</b>
3.3.5	10-12 Way	Each	160.00	<b>277.00</b>
3.3.6	16-18 Way	Each	175.00	<b>225.00</b>
3.4	Supplying and flush mounting powder coated / galvanized metal box suitable for mounting modular switch plates. The box should be firmly flush mounted after due groove cutting in Brick/Stone/C.C wall			
3.4.1	1-3 Way	Each	95.00	<b>123.00</b>
3.4.2	4-5 Way	Each	105.00	<b>138.00</b>
3.4.3	6 Way	Each	125.00	<b>212.00</b>
3.4.4	8 Way	Each	145.00	<b>250.00</b>
3.4.5	10-12 Way	Each	165.00	<b>325.00</b>
3.4.6	16-18 Way	Each	180.00	<b>354.00</b>
3.5	Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nuts etc., complete on the existing metal/PVC box.			
3.5.1	1 to 3 Module	Each	110.00	<b>152.00</b>
3.5.2	4 Module	Each	125.00	<b>175.00</b>
3.5.3	6 Module	Each	175.00	<b>244.00</b>
3.5.4	8 Module	Each	200.00	<b>302.00</b>
3.5.5	10-12 Module	Each	230.00	<b>363.00</b>
3.5.6	16-18 Module	Each	270.00	<b>403.00</b>
3.6	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293.			
3.6.1	6A One Way Switch	Each	70.00	<b>88.00</b>
3.6.2	6A Two Way Switch	Each	95.00	<b>152.00</b>
3.6.3	6A Three Way socket	Each	105.00	<b>162.00</b>
3.6.4	Stepped Fan Regulator Two Module	Each	290.00	<b>313.00</b>
3.6.5	400W Dimmer	Each	260.00	<b>281.00</b>
3.6.6	600W Dimmer	Each	294.00	<b>318.00</b>
3.6.7	1000-1200W Dimmer	Each	550.00	<b>594.00</b>
3.6.8	16A One Way Switch	Each	115.00	<b>249.00</b>
3.6.9	6A Bell Push	Each	96.00	<b>159.00</b>
3.6.10	32A DP Switch	Each	182.00	<b>375.00</b>
3.6.11	6/16A Universal Socket	Each	162.00	<b>249.00</b>
3.6.12	TV/Telephone Socket	Each	79.00	<b>147.00</b>
3.6.13	RJ45/I.O Outlet Cat-6	Each	195.00	<b>211.00</b>

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3.7	Supplying and fixing 32A security and energy saving DP switch with key tag suitable to operate on 230 V, 50Hz AC supply & completely wired on existing box.	Each	680.00	<b>747.00</b>
3.8	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc, and fixing on existing wooden or metal box using N.F. screws.	cm <sup>2</sup>	0.27	<b>0.29</b>
3.9	Supplying and fixing hylum plastic sheet 3mm thick with necessary nitches for fixing switches, regulators etc., and fixing on existing wood or metal box using N. F. screws.	cm <sup>2</sup>	0.24	<b>0.26</b>
3.10	Extra for supplying 4 mm thick white plastic plate and covering for junction boxes of size ..... mm conduit using necessary machine screws.			
3.10.1	80 mm	No	9.00	<b>10.00</b>
3.10.2	110 mm	No	11.00	<b>12.00</b>
3.11	Supplying 50mm wooden plug, tapered from 50x50mm to 25x25mm and fixing by using binding wire before concreting a roof slab.	No	7.00	<b>8.00</b>
3.12	Supplying .....way plastic gang box and fixing using necessary wooden/ rawl/phill plugs and screws.			
3.12.1	1 Way Gang Box	No	15.00	<b>16.00</b>
3.12.2	2 to 4 Way Gang Box	No	27.00	<b>29.00</b>
3.12.3	6 to 10 Way Gang Box	No	48.00	<b>52.00</b>
3.13	Supplying and fixing of metal clad industrial plugs and sockets.			
	<b>2pole+earth 250V PLUG</b>			
3.13.1	10A	Each	198.00	<b>214.00</b>
3.13.2	20A	Each	204.00	<b>220.00</b>
	<b>3pole+earth 440V PLUG</b>			
3.13.3	20A	Each	259.00	<b>280.00</b>
3.13.4	30A	Each	340.00	<b>367.00</b>
	<b>2pole+earth 250V SOCKET</b>			
3.13.5	10A	Each	201.00	<b>217.00</b>
3.13.6	20A	Each	240.00	<b>259.00</b>
	<b>3pole+earth 440V SOCKET</b>			
3.13.7	20A	Each	253.00	<b>273.00</b>
3.13.8	30A	Each	275.00	<b>297.00</b>
3.14	Supplying And fixing/replacing of 6/16/32A electrical accessories on existing switch board.			
3.14.1	6A SP Switch	No	40.00	<b>43.00</b>
3.14.2	6A Two Way Switch	No	55.00	<b>59.00</b>
3.14.3	6A Three Way 5 Pin Socket	No	60.00	<b>65.00</b>
3.14.4	6A Three Pin Top	No	48.00	<b>52.00</b>
3.14.5	6A Bakelite Ceiling Rose	No	58.00	<b>63.00</b>
3.14.6	6A Lamp Holder	No	58.00	<b>63.00</b>
3.14.7	6A Bell Push	No	55.00	<b>59.00</b>
3.14.8	6A Bell Buzzer	No	114.00	<b>123.00</b>
3.14.9	16A SP Switch	No	98.00	<b>106.00</b>
3.14.10	16A Two Way Switch	No	100.00	<b>108.00</b>
3.14.11	16A Three Way 5 Pin Socket	No	105.00	<b>113.00</b>
3.14.12	16A Three Pin Top	No	90.00	<b>97.00</b>
3.14.13	32A Bakelite DP	No	185.00	<b>200.00</b>
3.14.14	16/6A combined plug and socket with control switch	No	260.00	<b>281.00</b>
3.14.15	Electronic stepped regulator.	No	205.00	<b>221.00</b>
<b>Chapter - 4</b>				
<b>POLES &amp; HIGH MAST</b>				
4.0	<b>POLES &amp; HIGH MAST</b>			

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4.1	Fabricating, supplying and erecting Swaged tubular Pole of height ...m having three sections, and providing two coats of red oxide paint and finished with two coats of enamelled paint of approved quality and colour and M.S. base plate of suitable size welded at the bottom of the Pole(as per IS) and 40 mm dia GI/flexible PVC pipe of 1m length fitted to the heavy gauge polycarbonate control box including 5 Way connector of size 167 x 125 x 82 mm for 7.5M Pole/ 200 x 160 x 98 mm for remaining length of Pole with front opening cover, with locking arrangements and suitable capacity MCB/DP switch, The Pole shall be erected in cement concrete work (1:2:4) including excavation and refilling of planting depth of the Pole to the ground level and the coping CC shall be upto 0.6m above ground level as per IS2713-7.			
	Erection of heavy duty Pole on Footpath/median			
4.1.1	9m (5m Hb,165.1 mm dia 4.85 mm thick x 2m Hm, 139.7 mm dia 4.50 mm thick x 2m Ht,114.3 mm dia 3.65 mm thick) as per IS 410 SP 32	Each	13200.00	<b>13923.00</b>
4.1.2	10m (5m Hb,165.1 mm dia 4.85 mm thick x 3m Hm, 139.7 mm dia 4.50 mm thick x 2m Ht,114.3 mm dia 3.65 mm thick) as per IS 410 SP 47	Each	16720.00	<b>17163.00</b>
4.2	Fabricating, supplying and erection of ... ms long hot dip Galvanized Octagonal hot dip Pole with BSEN 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet and MCBs as per IS specifications suitable to withstand the wind speed of 47 m/s for .....m Pole in single section and single joint welded as per IS 9595/IS10178AWS having dimensions bottom ..... mm , top.... mm with 3 mm thick, suitable base plate and 4Nos of ..... long J bolts along with template and the Pole shall be hot dip galvanized in single dipping with not less than 65micron as per ASTM-A123 and 153 etc., (excluding foundation) as per drawing appended.			
4.2.1	3 m - Top 70 mm and Bottom 130 mm dia	Each	5360.00	<b>5671.00</b>
4.2.2	4 m - Top 70 mm and Bottom 130 mm dia	Each	6510.00	<b>7360.00</b>
4.2.3	5 m - Top 70 mm and Bottom 130 mm dia	Each	7651.00	<b>8871.00</b>
4.2.4	6 m - Top 70 mm and Bottom 130 mm dia	Each	9076.00	<b>10584.00</b>
4.2.5	7 m - Top 70 mm and Bottom 130 mm dia	Each	10930.00	<b>12036.00</b>
4.2.6	8 m - Top 70 mm and Bottom 135 mm dia	Each	12260.00	<b>13813.00</b>
4.2.7	9 m - Top 70 mm and Bottom 155 mm dia	Each	15064.00	<b>17419.00</b>
4.2.8	10 m - Top 70 mm and Bottom 175 mm dia	Each	15713.00	<b>14282.00</b>
4.2.9	11 m - Top 90 mm and Bottom 210 mm dia	Each	20698.00	<b>28350.00</b>
4.2.10	12 m - Top 90 mm and Bottom 240 mm dia	Each	24330.00	<b>32267.00</b>
4.3	Supply and erection of 14 Feet Height Street Light Pole 14 Feet Height Street Light Pole on suitable cement concrete foundation with 2.5 Feet height dia 95 mm cast iron decorative round pedestal as per design weighing not less than 37Kgs, the pedestal shall be fitted with Class 'C' G.I.Pipe 7 Feet height 75 mm outer dia and 7 feet height top piece outer dia of 65 mm fixed by measure of threading/welding/coupling complete. (excluding foundation).	Each	14080.00	<b>18603.00</b>

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4.4	Fabricating, supplying and erection of ... ms long hot dip Galvanized Conical hot dip Pole with BSEN 10025 grade S355JO steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet and MCBs as per IS specifications suitable to withstand the wind speed of 47 m/s for ..... m Pole in single section and single joint welded as per IS 9595/IS10178AWS having dimensions bottom .... mm , top ... mm with 3 mm thick, suitable base plate and 4Nos of.....long J bolts along with template and the Pole shall be hot dip galvanized in single dipping with not less than 65micron as per ASTM-A123 and 153 etc.,(excluding foundation) as per drawing appended.			
4.4.1	3 m - Top 77 mm and Bottom 105 mm dia	Each	5037.00	<b>5925.00</b>
4.4.2	4 m - Top 75 mm and Bottom 115 mm dia	Each	6368.00	<b>7553.00</b>
4.4.3	5 m - Top 75 mm and Bottom 125 mm dia	Each	8316.00	<b>9254.00</b>
4.4.4	6 m - Top 75 mm and Bottom 135 mm dia	Each	10312.00	<b>11376.00</b>
4.4.5	7 m - Top 75 mm and Bottom 145 mm dia	Each	12355.00	<b>13355.00</b>
4.4.6	8 m - Top 75 mm and Bottom 155 mm dia	Each	14541.00	<b>15924.00</b>
4.4.7	9 m - Top 75 mm and Bottom 165 mm dia	Each	17582.00	<b>18242.00</b>
4.4.8	10 m - Top 75 mm and Bottom 165 mm dia	Each	19700.00	<b>21509.00</b>
4.5	Fabrication, Supplying, Erection, Testing and Commissioning of ..... ms long Polygon high mast with Single/Multiple telescopic sections having, (minimum overlap distance of 1.5 times of top section) thickness as per BSEN 10025 grades 355 JO/ASTM A572-50 steel sheet plate for shaft suitable to withstand a wind velocity of 47 m/s as per IS 875 part 3(as per GA Drawing). Base plate as per IS 2062/ASTM A572-50. The mast shall be Galvanized in single Hot-dip as per BSEN ISO 1461/ASTM A123 with an average 70 microns as per IS 2629, and welded as per BS 5135 Single L-Seam joint The mast shall have 2 Way head frame with die cast LM-6 pulleys, stainless steel axle, Phosphorus Bronze bearing bush press-fitted with separate guides for 2 runs of 5 mm dia, stainless steel wire rope of AISI 304grade 7/19-core, (Factor of Safety as per TR no-7). 2.5 mm <sup>2</sup> EPR insulated PCP sheathed trailing power cable housed inside the bottom shaft of mast with door having locking arrangement The mast shall have manual/power tool (Suitable reversible geared motor operating on 230/415V, 50Hz, shall be provide above 15 Mtr mast) The mast shall have lantern of 2 segments, suitable dia with max load carrying capacity as per IS 1239. The mast shall be erected on existing RCC footing. The mast shall be supplied with 3 mm thick template, lightning arrester of 1.2m length galvanized pipe with top arrow fitted on top of the head frame cover and GLS type aviation twin 1 A fitting with wiring complete. (excluding foundation) as per technical data.			
4.5.1	12 m/12.5 m - Top 100 mm and Bottom 310 mm dia	Each	105600.00	<b>116177.00</b>
4.5.2	16 m - Top 150 mm and Bottom 410 mm dia	Each	140800.00	<b>174260.00</b>
4.5.3	20 m - Top 150 mm and Bottom 460 mm dia	Each	180400.00	<b>215556.00</b>
4.5.4	25 m - Top150 mm and Bottom 540 mm dia	Each	219120.00	<b>324365.00</b>
4.5.5	30 m - Top 150 mm and Bottom 610 mm dia	Each	277200.00	<b>406402.00</b>

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4.6	Fabricating, supplying and erection of ... ms long Glass Reinforced Plastics (GRP) Lighting Pole or Reinforced Thermosetting Plastic Pole (FRP) Conical- Embedded Type including Double Arm Brackets having made out of Polyester Resin with Glass Fibre by CNC Machines wherein Programmable Logic Control (PLC) is used in a close loop control circuit to control machine movements. This system allows for placement of right amount of fibreglass at the right place & orientation, Non filled resin system, Available upto 2 m to 12m, having Pole thickness 6- 9 mm , Tolerance in Length+/- 40 mm . Tolerance in Thickness +/-0.5 mm ., Glass Content More than 60%, Die Electric Strength 7.3 kV/ mm . Hence Pole does not require earthing, Specific Gravity 1.3 TO 1.95 kg/cm2, Tensile Strength 200±50 MPA, Flexural Strength 250± 50 MPA, Compressive Strength150±50 MPA, Impact Resistance 250 ± 50 KJ/M2, Water Absorption < 0.5%, Surface Colour Shade Polyurethane Paint of Shade - Aluminium, Charcoal or as per Client Requirement, Accessories(Optional) Junction Box/Side Arm/Tenon Mount Bracket, Hardware MS Zinc Passivated, Wind Load Our Pole will withstand high wind load upto50 M/S with maximum deflection of 15%. TECHNICAL DETAILS -FOUNDATION Specification: Standard Shaft Burial Depth will be as under. Also available as per Client Requirement 900 mm upto 5.5 m Pole for 1000 Series, 1200 mm upto 7 m Pole for 1000 Series 900 mm upto 5.5 m Pole for 2000 Series, 1200 mm upto 7.5 m Pole for 2000 Series, 1500			
4.6.1	3 m - Top 70 mm and Bottom 94 mm dia 5 mm thickness	Each	16042.00	<b>17325.00</b>
4.6.2	4 m - Top 70 mm and Bottom 102 mm dia 5 mm thickness	Each	21038.00	<b>22721.00</b>
4.6.3	5 m - Top 70 mm and Bottom 110 mm dia 5 mm thickness	Each	25578.00	<b>27624.00</b>
4.6.4	6 m - Top 85 mm and Bottom 163 mm dia 5 mm thickness	Each	29093.00	<b>31420.00</b>
4.6.5	7 m - Top 85 mm and Bottom 176 mm dia 5 mm thickness	Each	35515.00	<b>38356.00</b>
4.6.6	8 m - Top 85 mm and Bottom 201 mm dia 6 mm thickness	Each	40590.00	<b>43837.00</b>
4.6.7	9 m - Top 85 mm and Bottom 216 mm dia 7 mm thickness	Each	47591.00	<b>51398.00</b>
4.6.8	10 m - Top 85 mm and Bottom 230 mm dia 8 mm thickness	Each	60594.00	<b>65442.00</b>
4.6.9	11 m - Top 85 mm and Bottom 245 mm dia 8 mm thickness	Each	71438.00	<b>77153.00</b>
4.6.10	12 m - Top 85 mm and Bottom 260 mm dia 9 mm thickness	Each	78856.00	<b>85164.00</b>
4.6.11	13 m - Top 85 mm and Bottom 260 mm dia 9 mm thickness	Each	84671.00	<b>91445.00</b>
4.7	Supplying, and fixing of Hot dip Galvanized M.S.Bracket suitable for out door luminaries and mounted on Octagonal pole using necessary bolts, nuts etc., complete.			
4.7.1	Single Arm Bracket with 1000 mm Standard 40/50 mm dia	Each	1689.00	<b>1544.00</b>
4.7.2	Single Arm Bracket with 1500 mm Standard 40/50 mm dia	Each	2112.00	<b>1844.00</b>
4.7.3	Single Arm Bracket with 2000 mm Standard 40/50 mm dia	Each	2429.00	<b>2324.00</b>

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4.7.4	Double Arm Bracket with 1000 mm Standard 40/50 mm dia	Each	2323.00	<b>2324.00</b>
4.7.5	Double Arm Bracket with 1500 mm Standard 40/50 mm dia	Each	3115.00	<b>2624.00</b>
4.7.6	Double Arm Bracket with 2000 mm Standard 40/50 mm dia	Each	3696.00	<b>3524.00</b>
<b>Chapter - 5</b>				
<b>CONTROL SWITCH GEARS &amp; ACCESSORIES</b>				
<b>5.0</b>	<b>CONTROL SWITCH GEARS &amp; ACCESSORIES</b>			
5.1	Supplying push button operated direct online starter with an antiweld silver cadmium oxide contactor with replaceable fixed and moving contacts and bimetallic thermal overload relay help in anticorrosion treated sheet steel or iron clad enclosure and fixing the same to suitable capacity wires for 230/440 V 1/3 phase motor upto 5 HP.	Each	1380.00	<b>1490.00</b>
5.2	Supplying fully automatic star-delta starter unit push button type with suitable wires, 3 contactors, one adjustable thermal timer mounted on a common base plate held in steel enclosure for use on 400/440 V 3 phase and wired after fixing to the existing wooden board for motor.			
5.2.1	upto 12.5 HP	Each	6400.00	<b>6912.00</b>
5.2.2	Above 12.5 HP upto 25 HP	Each	8000.00	<b>8640.00</b>
5.2.3	Above 25 HP upto 35 HP	Each	13650.00	<b>14742.00</b>
5.3	Supplying and fixing single phase preventer using necessary wires over an existing panel board suitable for motor upto 20 HP capacities.	Each	745.00	<b>805.00</b>
5.4	Fixing a shunt capacitor of ... kVAR capacity with necessary clA, bolts, and nuts on existing wooden or metal board including banking of more than one capacitor.			
5.4.1	upto 5 kVAR	Each	133.00	<b>144.00</b>
5.4.2	6 to 10 kVAR	Each	191.00	<b>206.00</b>
5.4.3	11 to 20 kVAR	Each	310.00	<b>335.00</b>
5.5	Supplying of TPST with rewirable porcelain channels in SM enclosure. Made out of 14 SWG powder coated paint of approved colour.			
5.5.1	32A	Each	1800.00	<b>1944.00</b>
5.5.2	63A	Each	3480.00	<b>3758.00</b>
5.5.3	100A	Each	6270.00	<b>6772.00</b>
5.6	Supply and fixing polished wood board made of not less than 15mm thick plank on both sides of not more than 2 pieces and fixing the same to the wall using tapered inverted wooden plugs screws.			
5.6.1	8" x 6" x 1.5"	Each	70.00	<b>76.00</b>
5.6.2	10" x 8" x 1.5"	Each	90.00	<b>97.00</b>
5.6.3	12" x 9" x 1.5"	Each	93.00	<b>100.00</b>
5.6.4	12" x 12" x 2"	Each	150.00	<b>162.00</b>
5.6.5	15" x 12" x 2"	Each	170.00	<b>184.00</b>
5.6.6	20" x 20" x 2.5"	Each	292.00	<b>315.00</b>
5.7	Supplying & fixing of Porcelain fuse channel with cut out on existing wooden/panel using necessary nuts, bolts and washers.			
5.7.1	16 A	Each	117.00	<b>125.00</b>
5.7.2	32 A	Each	174.00	<b>200.00</b>
5.7.3	63 A	Each	227.00	<b>372.00</b>

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5.7.4	100 A	Each	349.00	<b>650.00</b>
5.7.5	200 A	Each	708.00	<b>1260.00</b>
5.7.6	320 A	Each	1394.00	<b>1842.00</b>
5.8	Supplying of Switch disconnecter fuse unit (TPN) HRC type (but without HRC fuses). With AC-23A duty and as per IS- 13947.			
5.8.1	63 A	Each	3430.00	<b>3704.00</b>
5.8.2	100 A	Each	4800.00	<b>5184.00</b>
5.8.3	125 A	Each	4900.00	<b>5292.00</b>
5.8.4	160 A	Each	5500.00	<b>5940.00</b>
5.8.5	200 A	Each	6000.00	<b>6480.00</b>
5.8.6	250 A	Each	7520.00	<b>8122.00</b>
5.8.7	315 A	Each	9500.00	<b>10260.00</b>
5.8.8	400 A	Each	11500.00	<b>12420.00</b>
5.9	Supplying and fixing HRC fuse units base on existing switch / panel board.			
5.9.1	6 to 16 A	Each	110.00	<b>118.00</b>
5.9.2	32 to 63 A	Each	250.00	<b>270.00</b>
5.9.3	100 to 300 A	Each	425.00	<b>459.00</b>
5.9.4	315 to 630 A	Each	900.00	<b>972.00</b>
5.10	Supplying and fixing HRC fuse link on existing switch fuse base with W loss as per IS-13703.			
5.10.1	upto 63 A	Each	223.00	<b>236.00</b>
5.10.2	Above 63 A to 200 A	Each	325.00	<b>380.00</b>
5.10.3	Above 200 A to 315 A	Each	600.00	<b>672.00</b>
5.10.4	Above 315 A to 425 A	Each	950.00	<b>1042.00</b>
5.10.5	Above 425 A to 630 A	Each	1050.00	<b>1147.00</b>
5.11	Supplying of on load change over switches 4 poles, AC-23A Duty, 415V, 50Hz, AC Supply. (Open Execution)			
5.11.1	upto 63 A	Each	4300.00	<b>5185.00</b>
5.11.2	100 A	Each	5500.00	<b>7200.00</b>
5.11.3	125 A	Each	7100.00	<b>9147.00</b>
5.11.4	200 A	Each	10500.00	<b>12086.00</b>
5.11.5	250 A	Each	15500.00	<b>15823.00</b>
5.11.6	400 A	Each	23600.00	<b>23425.00</b>
5.11.7	630 A	Each	29000.00	<b>32927.00</b>
5.11.8	800 A	Each	41100.00	<b>42540.00</b>
5.12	Supplying of on load change over switches 4 poles, AC-23A Duty, 415V, 50Hz, AC Supply. With all accessories. (SM Enclosure Sheet Metal Execution)			
5.12.1	63 A	Each	5300.00	<b>6391.00</b>
5.12.2	100 A	Each	7000.00	<b>7971.00</b>
5.12.3	125 A	Each	7300.00	<b>11813.00</b>
5.12.4	200 A	Each	13700.00	<b>14417.00</b>
5.12.5	250 A	Each	20400.00	<b>19921.00</b>
5.12.6	400 A	Each	23600.00	<b>30228.00</b>
5.12.7	630 A	Each	33300.00	<b>34912.00</b>
5.12.8	800 A	Each	49000.00	<b>54542.00</b>
5.13	Supply and fixing of 4pole power contactor with NO/NC contacts on existing wood/panel board using necessary bolts, nuts, washers and wiring etc., complete with AC-3 Rating and as per IS-13947.			
5.13.1	25 A	Each	1263.00	<b>1187.00</b>
5.13.2	40 A	Each	1840.00	<b>2126.00</b>
5.13.3	60 to 70 A	Each	4200.00	<b>4926.00</b>
5.13.4	100 to 125 A	Each	7200.00	<b>9001.00</b>

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5.13.5	130 A	Each	9200.00	<b>8950.00</b>
5.13.6	160 A	Each	14300.00	<b>14220.00</b>
5.13.7	200 A	Each	16700.00	<b>19003.00</b>
5.13.8	255 A	Each	19000.00	<b>27601.00</b>
5.13.9	330 A	Each	32300.00	<b>30585.00</b>
5.13.10	360 A	Each	33000.00	<b>40842.00</b>
5.13.11	400 A	Each	39200.00	<b>47175.00</b>
5.13.12	500 A	Each	49200.00	<b>59235.00</b>
5.13.13	600 A	Each	52000.00	<b>Delete</b>
5.13.14	700 A	Each	70800.00	<b>79978.00</b>
5.13.15	800 A	Each	72000.00	<b>101189.00</b>
5.14	Supplying and fixing Moulded Case Circuit Breaker (MCCB) over the existing wood/panel board using necessary screws, bolts, nuts, necessary phase separators, handle and wiring complete. Protection of Overload and Short circuit in Thermal Magnetic Release. Micro processor release shall have Earth Fault as per IS-13947. (Icu=100% lcs). In 4P MCCB, all Poles should have protection for Short-Circuit/Over Load. For Microprocessor MCCBS Facility for segregating Priority and Non-Priority loads must be available in the MCCB. MCCB shall be provided with double insulation (insulation between front cover and internal power circuits to avoid any accidental contact with live current carrying path with the front cover open). Multi-pole breakers shall be designed to break all the poles simultaneously and they shall have a single mechanism.			
	<b>THREE Pole</b>			
5.14.1	100 A 25 kA	Each	4530.00	<b>5641.00</b>
5.14.2	125 A 25 kA	Each	6200.00	<b>8586.00</b>
5.14.3	160 A 25 kA	Each	6500.00	<b>10750.00</b>
5.14.4	200 A 35 kA	Each	10700.00	<b>16770.00</b>
5.14.5	250 A 35 kA	Each	15350.00	<b>18566.00</b>
5.14.6	400 A 50 kA	Each	23100.00	<b>23683.00</b>
	<b>FOUR Pole</b>			
5.14.7	100 A 25 kA	Each	6400.00	<b>8265.00</b>
5.14.8	125 A 25 kA	Each	8250.00	<b>10072.00</b>
5.14.9	160 A 25 kA	Each	8500.00	<b>12566.00</b>
5.14.10	200 A 35 kA	Each	16100.00	<b>21289.00</b>
5.14.11	250 A 35 kA	Each	17100.00	<b>22530.00</b>
5.14.12	320-400 A 50 kA	Each	26000.00	<b>29092.00</b>
5.14.13	400-500 A 50 kA	Each	27200.00	<b>38953.00</b>
5.14.14	500-630 A 50 kA	Each	28500.00	<b>39465.00</b>
5.14.15	700-800 A 50 kA	Each	40300.00	<b>43524.00</b>
5.15	Supplying and fixing of Shunt trip suitable for MCCB.CBCT	Each	1400.00	<b>1512.00</b>
5.16	Supplying and fixing regular MCCB distribution Panel confirming to IS/IEC 61439 - 3 and IK09 tested as per IS/IEC 62262 with minimum IP43 protection provided with Polyurethane (PUR) gasket, with suitable earthing system, on wall/wood board/flush mounting using required cl A , bolts, nuts, etc., with provision for fixing of suitable type capacity MCCB's as an incomer for 3 phase Double door with necessary bus bar completely wired to use on 440V 3phase 4 wire powder coated painting etc., complete with a provision for fixing of single/three phase suitable capacity MCB's as outgoings confirming to IS/IEC 60898 - 2.			

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5.16.1	4 Way	Each	7000.00	<b>9169.00</b>
5.16.2	8 Way	Each	8800.00	<b>10741.00</b>
5.16.3	12 Way	Each	11400.00	<b>14457.00</b>
5.17	Supplying & fixing miniature circuit breakers on existing MCB distribution boards using necessary fixing materials and 'C' Type curve, indicator ON/OFF, energy cross-3 with Short circuit breaking capacity of 10K and complete wiring as required confirming to IEC 60898.			
5.17.1	6-32 A SP	Each	434.00	<b>523.00</b>
5.17.2	40 A SP	Each	713.00	<b>726.00</b>
5.17.3	50-63 A SP	Each	723.00	<b>734.00</b>
5.17.4	6-32 A DP	Each	909.00	<b>1103.00</b>
5.17.5	40 A DP	Each	1336.00	<b>1363.00</b>
5.17.6	50-63 A DP	Each	1355.00	<b>1376.00</b>
5.17.7	6-32 A TPN	Each	1715.00	<b>1777.00</b>
5.17.8	40 A TPN	Each	2374.00	<b>2393.00</b>
5.17.9	50-63 A TPN	Each	2397.00	<b>2399.00</b>
5.18	Supplying and fixing regular MCB distribution boards on wall/ood board / flush mounting using required cIA, bolts, nuts etc., with provision for fixing suitable type capacity MCB's single phase/3 phase/single door with powder coated painting Made out of 14 SWG MS enclosure.			
	<b>I - Single Door</b>			
5.18.1	4 Way SP & N	Each	777.00	<b>1104.00</b>
5.18.2	6 Way SP & N	Each	983.00	<b>1180.00</b>
5.18.3	8 Way SP & N	Each	960.00	<b>1302.00</b>
5.18.4	12 Way SP & N	Each	1210.00	<b>1591.00</b>
5.18.5	16 Way SP & N	Each	New item	<b>1928.00</b>
	<b>II - Double Door</b>			
5.18.6	4 Way SP & N	Each	1100.00	<b>1368.00</b>
5.18.7	6 Way SP & N	Each	1300.00	<b>1552.00</b>
5.18.8	8 Way SP & N	Each	1450.00	<b>1695.00</b>
5.18.9	12 Way SP & N	Each	1800.00	<b>2067.00</b>
5.18.10	16 Way SP & N	Each	New item	<b>2650.00</b>
	<b>III - Double Door</b>			
5.18.11	4 Way TP & N	Each	2650.00	<b>3053.00</b>
5.18.12	6 Way TP & N	Each	3330.00	<b>3735.00</b>
5.18.13	8 Way TP & N	Each	3850.00	<b>4136.00</b>
5.18.14	12 Way TP & N	Each	5850.00	<b>5744.00</b>
5.18.15	16 Way SP & N	Each	New item	<b>10780.00</b>
5.19	Supplying, fixing and wiring Residual current circuit breaker (RCCB) 240/450V upto 300mA sensitivity on existing wood/panel board.			
5.19.1	16A-25A 2 pole	Each	3100.00	<b>4548.00</b>
5.19.4	32-40A 2 pole	Each	3850.00	<b>4831.00</b>
5.19.5	63 A 2 pole	Each	4100.00	<b>5472.00</b>
5.19.6	16-25A 4 pole	Each	3735.00	<b>4601.00</b>
5.19.8	32-40A 4 pole	Each	4285.00	<b>4677.00</b>
5.19.10	63 A 4 pole	Each	4800.00	<b>5039.00</b>
5.20	Supplying, fixing and wiring Earth Leakage Miniature Circuit Breaker (ELMCB) 240/450V upto 300mA sensitivity on existing wood/panel board.			
5.20.1	16-25 A 2 pole	Each	2300.00	<b>2536.00</b>
5.20.2	32-40 A 2 pole	Each	2500.00	<b>2652.00</b>
5.20.3	32-40 A 4 pole	Each	2800.00	<b>2826.00</b>
5.20.4	63 A 4 pole	Each	3200.00	<b>3058.00</b>

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5.21	Supplying, fixing and wiring earth leakage relay with core balanced current transformer suitable for single phase 50 Hz AC with latest microcontroller based, digital readout of percentage leakage current, programmable delay/auto/manual reset facility suitable to mount on DIN rail/ flush mounting on panel board.	Each	7700.00	<b>8316.00</b>
5.22	Supplying, fixing and wiring 0 to 600V 96x96mm AC Voltmeter on existing panel/wood board.	Each	377.00	<b>407.00</b>
5.23	Supplying, fixing and wiring 0 to 30V Direct Reading DC Voltmeter/Ammeter.	Each	575.00	<b>621.00</b>
5.24	Supplying, fixing and wiring 0 to 30A Direct Reading AC analog type Ammeter	Each	387.00	<b>418.00</b>
5.25	Supplying, fixing and wiring 0 to 100 A Direct Reading AC analog type Ammeter	Each	437.00	<b>472.00</b>
5.26	Supplying, fixing and wiring 0 to 1500A CT operated AC analog type Ammeter without CT	Each	402.00	<b>434.00</b>
5.27	Supplying, fixing and wiring rotary selector switch suitable for Ammeter	Each	165.00	<b>178.00</b>
5.28	Supplying, fixing and wiring rotary selector switch suitable for Voltmeter	Each	135.00	<b>146.00</b>
5.29	Supplying, fixing and wiring 3 Phase Digital Ammeter / Voltmeter	Each	1185.00	<b>1280.00</b>
5.30	Supplying, fixing and wiring Electronic Trivector Meter (ETV) 5 to 20A single phase Class-1 Accuracy with Temper Proof Energy Meter.	Each	1150.00	<b>1242.00</b>
5.31	Supplying and fixing Electronic Trivector Meter (ETV) suitable for operation LT operation and -CT operated meter in polycarbonate body in class 0.5 accuracy as per IS 14697 and completely wired.	Each	3650.00	<b>3942.00</b>
5.32	Supplying and fixing digital frequency meter with latest micro controller technology, ultra bright 4 digit LED display, from 30-500V AC and optional or relay output for high/low frequency and wiring complete.	Each	810.00	<b>875.00</b>
5.33	Supplying of multi function digital meter with three line back light LCD type display for voltage, Current, frequency, Power, power factor, kVA, kWh, kVAR suitable for 3 phase, 4 wire LT network with IP 54 degree of protection and completely wired as required with communication Port and Class 0.5s accuracy	Each	7750.00	<b>8370.00</b>
5.34	Supplying, fixing and wiring 50/5 to 400/5A 5VA burden Current Transformer Class 0.5 accuracy with Tape Wound.	Each	468.00	<b>505.00</b>
5.35	Supplying, fixing and wiring Electronic Trivector Meter (ETV) 5 to 32/63 A three phase 4 wire whole current class-1 Accuracy Energy Meter.	Each	4745.00	<b>5125.00</b>
5.36	Supplying, fixing and wiring 1000/5A to 1600/5A 15VA Burden class 1 Current Transformer	Each	700.00	<b>756.00</b>
5.37	Supplying, fixing and wiring heavy duty low voltage capacitors conforming to IS 2834. 3 phase, 400/440 V grade, for power factor improvement of rotating machineries like induction motor.	KVAR	400.00	<b>432.00</b>
5.38	Supplying and fixing of LED type panel board indicating lamp with required colour suitable for 230/440VAC. 50 Hz 12/24V D.C.	Each	430.00	<b>464.00</b>

			SR 2019-20	SR 2022-23
5.39	Supplying, fixing and wiring Automatic Power Factor controller circuit unit fully, static units controlled by 14 stage microprocessor operation, relays LED display, self programming function for power stages and operating logic checking facility for healthy and efficient of each individual capacitor bank, measurement of network harmonics with indication when limit values are exceeded, Comprehensive displays with large, three phase LED display, Long term memory for settings, protection for over voltage, power factor correction fault and no voltage, to connect/ disconnect banks, with automatic recognition or with standard programs	Each	18000.00	<b>19440.00</b>
5.40	Supplying ..... A rated 3phase with neutral bus bar using required capacity electrolytic aluminium strips covered with heat shrinkable coloured PVC sleeve, mounted on phenolic/FRP/DMC insulator which are mounted on powder coated 40x6mm M.S.flat frame work in existing panel board. The bus bar shall have suitable holes for termination of incoming and outgoing cables as per IS specification with necessary bolts, nuts and washers etc., complete			
5.40.1	100 A 4 x 30 x 6 mm Aluminium Strips	m	2050.00	<b>2214.00</b>
5.40.2	250 A 4 x 30 x 10 mm Aluminium Strips	m	2850.00	<b>3078.00</b>
5.40.3	400 A 4 x 50 x 10 mm Aluminium Strips	m	3700.00	<b>3996.00</b>
5.40.4	600 A 4 x 75 x 10 mm Aluminium Strips	m	4680.00	<b>5054.00</b>
5.40.5	1000 A double run of 4 x 60 x 10 mm Aluminium Strips	m	8800.00	<b>9504.00</b>
5.41	Supplying and fixing angle iron frame work fabricated out of M.S. angle iron.. and M.S. Flat.....with bolts, washers etc., and painted with 2 coats of red oxide and then two coats of approved paint.			
5.41.1	40 x 40 x 6 mm	m	255.00	<b>275.00</b>
5.41.2	50 x 50 x 6 mm	m	330.00	<b>356.00</b>
5.41.3	75 x 75 x 6 mm	m	460.00	<b>497.00</b>
5.41.4	50 x 100 x 50 x 6 mm C channel	m	630.00	<b>680.00</b>
5.41.5	75 x 150 x 75 x 6 mm C channel	m	770	<b>832.00</b>
5.42	Fabricating supplying and mounting MS box made out ....SWG suitable for floor /wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size cIA with necessary cable entry pipe with gland and box should be finished with 7tanks treatment with powder coated paint and finally finished with approved colour etc., complete.			
5.42.1	14 SWG	cm <sup>2</sup>	0.40	<b>0.43</b>
5.42.2	16 SWG	cm <sup>2</sup>	0.35	<b>0.38</b>
5.42.3	18 SWG	cm <sup>2</sup>	0.30	<b>0.32</b>

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5.43	Supply and Installation / Fixing / Provision of Pole box with HRC Fuse / MCB provision and suitable connector / terminal for 3 Ph/ 1 Ph connections with Loop-In & Loop- Out terminals for 10 mm <sup>2</sup> /25 mm <sup>2</sup> 3.5 C Al/Ar/Cu/Ar Cable and branch out 2.5 mm <sup>2</sup> 2 core Al/Cu PVC Insulated cable, enclosed in a Thermoplastic, Polystyrene enclosure, which should be shock proof, safe, IP65(Weather Proof), rust proof, dust proof, water proof having Internally Embedded Gasket with provision for cable entry through IP65 Thermoplastic, polyamide glands and/or grommets.			
5.43.1	200 mm x 200 mm x 98 mm	Each	1917.00	<b>2070.00</b>
5.43.2	260 mm x 210 mm x 116 mm	Each	2054.00	<b>2218.00</b>
5.44	Supply and Installation / Fixing / Provision of Outdoor type Thermoplastic Modular Panel enclosure with transparent Polycarbonate Lid, shock proof, IP65 (Weather Proof), rust proof, dust proof, water proof, corrosion proof having internally Embedded gasket on both lid and flap suitable to fix Single Phase /Three Phase Energy Meter in suitable base plate and having a provision for Fuse / MCB cut-out with suitable transparent hinged flap opening for operating MCB along with complete tamper proof SEALING facility.			
5.44.1	300 mm x 300 mm x 214 mm	Each	3754.00	<b>4054.00</b>
5.44.2	300 mm x 450 mm x 214 mm	Each	5127.00	<b>5537.00</b>
5.44.3	300 mm x 600 mm x 170 mm	Each	5713.00	<b>6170.00</b>
5.44.4	600 mm x 600 mm x 170 mm	Each	12081.00	<b>13047.00</b>
5.45	Supplying and fixing of Metal Socket set of 2pole and earth plugs and socket for incorporating SP and TP MCB (Without MCB). The entire plug and socket shall be mounted in a thermoplastic / powder coated metal box & wired Completely.			
	<b>SP &amp; N</b>			
5.45.1	10 A	Each	787.00	<b>850.00</b>
5.45.2	20 A	Each	808.00	<b>873.00</b>
	<b>TP &amp; N</b>			
5.45.3	20 A	Each	1030.00	<b>1112.00</b>
5.45.4	30 A	Each	1420.00	<b>1534.00</b>
5.46	Supplying and fixing of Modular MCB Devices (Tripper) With Breaking capacity of 6kA.			
5.46.1	16 - 32 A SP	Each	176.00	<b>190.00</b>
5.46.2	40 A SP	Each	250.00	<b>270.00</b>
5.46.3	63 A SP	Each	313.00	<b>338.00</b>
5.46.4	16 - 32 A TP	Each	668.00	<b>721.00</b>
5.46.5	40 A TP	Each	900.00	<b>972.00</b>
5.46.6	63 A TP	Each	994.00	<b>1074.00</b>
5.47	Supplying and fixing Microprocessor based Electronic timer (without contactor, Din Mounting using necessary bolts, nuts and washers etc.,) <b>3-120sec</b> setting.	Each	1925.00	<b>2079.00</b>
5.48	Supplying and fixing Microprocessor Based Astronomical timer Switch with using necessary bolts, nuts and washers.	Each	4030.00	<b>4352.00</b>
5.49	Supplying and fixing of solar Lux level street light control switch single phase including suitable capacity contactor			
5.49.1	3 kW	Each	8400.00	<b>9072.00</b>
5.49.2	5 kW	Each	8800.00	<b>9504.00</b>
5.49.3	8 kW	Each	10000.00	<b>10800.00</b>

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5.50	Supplying and fixing of solar Lux level street light control switch three phase including suitable capacity contactor			
5.50.1	5 kW	Each	10000.00	<b>10800.00</b>
5.50.2	8 kW	Each	10900.00	<b>11772.00</b>
5.50.3	12 kW	Each	13840.00	<b>14947.00</b>
5.51	Supply and fixing of fully Enclosed Automatic Transfer Switch (ATS) Pre-wired with Flexible Settings and seamless transfer between two power sources. The enclosure made of MS Power coated of necessary size. The switch comprising of EB/DG-Priority Source Selection,. Adjustable Time Delay (0.1sec to 3 hours),.Double-Break Contact System offering High Short-time Withstand (Icw),.with necessary Terminal Shrouds, Phase Barriers & Source Separator,. Protections for UV/OV, Phase Sequence, Single Phasing, Frequency variation. There should be sufficient space for cable termination. Three Phase 415 V			
5.51.1	125 A	Each	69000.00	<b>74520.00</b>
5.51.2	160 A	Each	75000.00	<b>81000.00</b>
5.51.3	200 A	Each	76500.00	<b>82620.00</b>
5.51.4	250 A	Each	95000.00	<b>102600.00</b>
5.52	Supply, Installation, Testing & Commissioning of ACCL-Automatic Changeover and Current Limiter is DIN-Rail mounted in Polycarbonate housing. When the main supply fails and stand by Generator supply is on, it automatically connects the DG power and monitor the load. When ever the load current exceeds preset limit, power must be automatically switched off for 8/10/12 seconds, and then automatically restore when the load current receds. It is Micro- processor based, pre-trip LED indication. Operating range 190V- 270V, 50Hz single phase power supply, Conforming to IEC 60947-6, IEC 60947-3. Extremely energy efficient by consuming negligible power without heating. Minimum time delay setting for mains transfer as added safety.			
5.52.1	ACCL SPN upto 20A DG Supply	Each	3200.00	<b>3456.00</b>
5.52.2	ACCL SPN 25 upto 63A DG Supply	Each	5200.00	<b>5616.00</b>
5.53	Supply, Installation, Testing & Commissioning of ACCL-Automatic Changeover and Current Limiter is DIN-Rail mounted in Polycarbonate housing. When the main supply fails and stand by Generator supply is on, it automatically connects the DG power and monitor the load. When ever the load current exceeds preset limit, power must be automatically switched off for 8/10/12 seconds, and then automatically restore when the load current receds. It is Micro- processor based, pre-trip LED indication. Operating range 320V- 415V, 50Hz Three phase power supply, Conforming to IEC 60947-6, IEC 60947-3. Extremely energy efficient by consuming negligible power without heating. Minimum time delay setting for mains transfer as added safety. Must Automatically connect the loads on three DG Phases and allows unbalanced load upto specified load limits.			
5.53.1	ACCL 40 A DG Supply TPN.	Each	10500.00	<b>11340.00</b>
5.53.2	ACCL 40 A upto 63 A DG Supply TPN.	Each	18500.00	<b>19980.00</b>

			SR 2019-20	SR 2022-23
5.54	<p>Supply, installation &amp; Commissioning of lighting control automation - Single switch plate with built in wireless communication ..</p> <p>Product Features</p> <ul style="list-style-type: none"> <li>• Smart switches will be available to fit into standard 2 modular back boxes</li> <li>• Should have capacitive based touch to operate each switch with LED indication. Touch switches will work with wet hands (water tolerance) and will have a Polycarbonate/Glass facade.</li> <li>• Load bearing capacity of each switch will be min 0W and max 500 W</li> <li>• Infra Red compatible switchboard to enable operation and control of lights and fans.</li> <li>• Should be completely retro-fit-able &amp; compatible with the existing standard modular back box of any make without any additional Wiring</li> <li>• Should be compatible for existing wiring (neutral, ground and phased switched)</li> <li>• Integrated power supply (90 to 250V), optional separate power supply if required.</li> <li>• On board Microcontroller with built in intelligence.</li> <li>• On board wireless module with built-in capability for 2-way (bidirectional) communication with the gateway server.</li> </ul>			
	<ul style="list-style-type: none"> <li>• On board memory to recall the previous state of the</li> <li>•Should have Android and IOS custom App compatible. switch board On board 'C' firmware</li> <li>•Self-learning remote keys to fix which remote key to operate which lights.</li> <li>•App control for controlling lights and fan (ON/OFF &amp; speed control)</li> <li>•Switch shall be Timed to switch ON /OFF at any given time. Further, this configuration shall be made to repeat on particular day or cyclical. All this shall be done through the mobile app and powered by the Gateway.</li> <li>•Switches shall be part of Mood/Scene setting configured through the mobile app. (Mood / Scene setting example can be explained as switching on the Light, closing the Curtain, switching on the Fan, etc simultaneously at the press of one button on the app)</li> <li>•Communication features</li> <li>•RF @ 2.4GHz Zigbee based (with min. 1 Meter &amp; Max of 50-meter range in line of sight), 2-way Bi-directional protocol based system for operating &amp; controlling Lights &amp; Fans and communicating on encrypted protocol</li> <li>•Capability to communicate with the gateway server wirelessly.</li> <li>•IR based hand remote control for operating &amp; controlling lights and fan (available in colour combinations of white with gold, orange LEDs and black with colour combinations of black with gold, blue LEDs)</li> </ul>			
5.54.1	2 module back box	Each	11885.00	<b>12836.00</b>
5.54.2	3 module back box	Each	13750.00	<b>14850.00</b>
5.54.3	4 module back box	Each	14914.00	<b>16107.00</b>
5.54.4	Two switch+ One fan plate with built in wireless communication (4 module back box)	Each	18177.00	<b>19631.00</b>
5.54.5	8 module back box	Each	21441.00	<b>23156.00</b>

			SR 2019-20	SR 2022-23
5.54.6	Five switch + One fan plate with built in wireless communication (8 module back box)	Each	24237.00	<b>26176.00</b>
5.54.7	Six Switch + One Socket with control plate built-in Wireless communication (8 Module Back box)	Each	20508.00	<b>22149.00</b>
5.54.8	One Switch+ One Socket with control plate built-inWireless communication (4 Module Back box)	Each	13983.00	<b>15102.00</b>
5.54.9	Four Switch + One Fan+ One Socket with control plate built-in Wireless communication (8 Module Back box)	Each	25169.00	<b>27183.00</b>
5.55	Supply, Installation & Commissioning of lighting control automation -Wireless PIR Motion Sensor Wireless PIR .Motion Sensor (Product no -) PIR sensors shall be deployed for on demand lighting / electric requirement- for example restroom operation with maximum load of 200 W, outdoor monitoring during night activating Light, Siren, etc	Each	9787.00	<b>10570.00</b>
	<ul style="list-style-type: none"> <li>• Wireless PIR motion sensors- This is a Wireless PIR where number of devices that shall be configured for action upon trigger of an event powered by the gateway server (max of 4 devices).</li> <li>• On/off time adjustable (mobile time setting)</li> <li>• Wireless PIR Configuration which shall include pairing end devices and their action shall be done easily using the Mobile App.</li> <li>• LUX setting option to avoid switch on when sufficient light present (optional).</li> <li>• On board proprietary firmware developed using 'C' language.</li> <li>• Wireless communication using the safe RF @ 2.4GHz Zigbee module communicating on encrypted protocol</li> <li>• Should also control Air Conditioner / Geyser ON &amp; OFF operation</li> </ul>			
5.56	Supply, Installation & Commissioning of lighting control automation -Wired PIR Motion Sensor <ul style="list-style-type: none"> <li>• PI R sensors shall be deployed for on demand lighting/ electric requirement</li> <li>• PI R sensor directly activates/ deactivates the end devices which are all wired together</li> </ul>	Each	6991.00	<b>7550.00</b>

			SR 2019-20	SR 2022-23
5.57	<p>Supply, installation &amp; Commissioning of lighting control automation -Air-conditioning drivers upto 4 ton AC Product Features</p> <ul style="list-style-type: none"> <li>• Load bearing capacity will be min 0.8 ton to max 4 ton AC.</li> <li>• Infrared compatible switchboard to enable operation and control</li> <li>• Should be completely retro-fit-able &amp; compatible with the existing standard 2 modular back box of any make without any additional Wiring</li> <li>• Should be compatible for existing wiring (neutral, ground and phased switched)</li> <li>• On board Microcontroller with built in intelligence</li> <li>• On board wireless module with built-in capability for 2-way (bidirectional) communication with the gateway server.</li> <li>• On board memory to recall the previous state of the switch board even in the case of power failure</li> <li>• On board buzzer for audible indication</li> <li>• On board Relays for ON &amp; OFF operation. Software features</li> <li>• Should have Android and iOS custom App compatible switch board</li> <li>• On board 'C' firmware</li> <li>• Self-learning remote keys to fix which remote key to operate which lights.</li> <li>• App control for controlling lights and fan</li> </ul>	Each	13050.00	<b>14094.00</b>
	<ul style="list-style-type: none"> <li>• Switch shall be Timed to switch ON / OFF at any given time. Further, this configuration shall be made to repeat on particular day or cyclical or any pattern the user wishes. All this shall be done through the mobile appand powered by the Gateway.</li> <li>• Switches shall be part of Mood / Scene setting configured through the mobile app. (Mood / Scene setting example can be explained as switching on the Light, closing the Curtain, switching on the Fan, etc)</li> </ul> <p><b>Communication features</b></p> <ul style="list-style-type: none"> <li>• RF @ 2.4GHz Zigbee based (with min. 1 Meter &amp; Max of 100-meter range in line of sight), 2-way Bi-directional protocol based system for operating &amp; controlling Lights &amp; Fans and communicating on 128 bit encrypted protocol</li> <li>• Capability to communicate with the gateway server wirelessly.</li> <li>• IR based hand remote control for operating &amp; controlling lights and fan Communication shall be purely 'wireless' without any additional wiring (LAN, CAT5, CAT6, 2Wire etc ...)</li> </ul>			

			SR 2019-20	SR 2022-23
5.58	<p>Supply, Installation &amp; Commissioning of lighting control automation -Motorized Curtain Controller with fitting upto 15ft width of the window Product Features</p> <ul style="list-style-type: none"> <li>• Plug and play module</li> <li>• Easy to Install and compact design</li> <li>• Should be integrated with the motor</li> <li>• Should support- Roller Curtain and normal sideways moving curtains</li> <li>• Curtains shall be operable manually in case of power failure</li> <li>• Curtain Operations should be controlled through App (IOS and Android). They shall also be configured to open/ close at particular time of day and repeat the same on chosen days as per user choice.</li> <li>• Should be able to set schedules for automated operation of single/dual shades or curtains from the App</li> <li>• Should operate as a group or individual</li> <li>• Curtain operations shall be a part of Mood / Scene setting For example every morning you shall Open the Curtain, Switch on the Geyser, etc</li> </ul> <p>Tech features</p> <ul style="list-style-type: none"> <li>• Wireless Operation through 2.4GHz Zigbee Low RF radiation for Home / Office use and communicating on 128 bit encrypted protocol</li> <li>• Relay driven for On/Off</li> </ul> <p>Power consumption of 2mA</p>		43814.00	<b>47319.00</b>
5.59	<p>Supply, Installation &amp; Commissioning of lighting control automation -I R Remote for Automation</p> <ul style="list-style-type: none"> <li>• Their remote shall control with 5-meter range</li> <li>• Should operate on 2 AAA or AA batteries</li> <li>• Total number of keys shall be maximum of 32 keys</li> <li>• Common remote for all switch boards, with a maximum of 6 switch board controls in one place</li> <li>• Maximum number of 2 fans shall be controlled</li> <li>• All on and all off keys optional</li> <li>• Infrared Communication which will work upto 15 ms</li> </ul> <p>Distance</p>	Each	699.00	<b>755.00</b>
5.60	<p>Supply, Installation &amp; Commissioning of lighting control automation -Gateway Server Product Features</p> <ul style="list-style-type: none"> <li>• Brain of the Home Automation Network communicating on secured encrypted protocol</li> <li>• Separate power supply for easy service</li> <li>• Will support maximum of 30 switch boards</li> <li>• Runs 24/7 on Linux / Android Operating System</li> <li>• On board Gateway Software to support min. 10 clients connections</li> <li>• Inbuilt My SQL Database Management System for Logging each and every activity for meaningful interpretation when required</li> <li>• 3G/4G internet connection for remote access (optional)</li> </ul> <p>Technical Specification</p> <ul style="list-style-type: none"> <li>• Single RF@ 2.4GHz Zigbee RF communication with all other Home Automation Devices</li> <li>• On board LAN port</li> <li>• On board diagnostic LED for LAN, Battery, Serial Communication, etc</li> <li>• Linux based RAM and ROM</li> </ul>	Each	69914.00	<b>75507.00</b>

		SR 2019-20	SR 2022-23	
5.61	Supply, Installation & Commissioning of lighting control automation -Android / IOS App • App should be compatible with android 4.0 above <ul style="list-style-type: none"> <li>• Option to provide /configure only the required switch board access per person</li> <li>• Option to delete users, at the time of termination of the service</li> <li>• Options to enable / disable, the hardware switchboard features from mobile software</li> </ul> a. Touch switch (child lock) b. Buzzer c. On board LED's d. IR remote <ul style="list-style-type: none"> <li>• Option to control the switch board form wifi or 3g connection</li> <li>• Option to configure the app on the fly, from anywhere in the world. • App shall be able to Add more HA devices. •App shall be able to configure Timers with repeat in cycles as desired by the user •App shall be able to let user set Moods/Scene</li> <li>•Analytics - Give Demographics, User Activity on App (Time spent, Screens, etc ), OS Version, in the form of Pie / Bar Charts. • Inbuilt Wifi / 3G-4G connection for the Smart phone.</li> </ul>	Each	699.00	<b>755.00</b>
<b>Chapter - 6</b>				
<b>FANS &amp; AIR CONDITIONERS</b>				
<b>6.0</b>	<b>FANS &amp; AIR CONDITIONERS</b>			
6.1	Supplying exhaust fan of 1440 RPM of 300 mm (12") size with bracket blades complete for light duty suitable to operate on 230V 50Hz, AC Supply.	Each	1200.00	<b>1542.00</b>
6.2	Supplying of 1440rpm heavy duty exhaust fan with bracket blades suitable to operate on 230V 50Hz, AC Supply complete.			
6.2.1	12" Sweep (300 mm)	Each	2100.00	<b>2997.00</b>
6.2.2	15" Sweep (450 mm)	Each	4000.00	<b>4126.00</b>
6.3	Supplying capacitor type ceiling fan complete with down rod blades, shackle, canopies etc, for operation on 230 V, 50 cycles. Single phase AC supply conforming to ISS-374- 1979 and with double ball bearing system.			
6.3.1	48" Sweep (1200 mm) Regular model	Each	2090.00	<b>2085.00</b>
6.3.2	56" Sweep (1400 mm) Regular model	Each	2127.00	<b>2170.00</b>

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6.4	Supplying of Ceiling Fan with Capacitor rating As per guideline of BEE 5 star rating and IS:374/79 and also comply with IS: 1709/1984 with latest amendment, Rated voltage 220 V/50 Hz, Rated power input 48 W +/- 10 %, Rated current As per IS:374/79, Rated power factor 0.9 lagging(min), Rated speed 350 +/- 10% RPM, Rated air delivery 210 +/- 10% Cubic Meter Minimum, Rated service value 4.2 CMM / W, Three Blades of blade leaf 1.05 mm thick Aluminium Alloy sheet, Class B motor insulation, Bearing Two ball bearings, Top 6202, Bottom 6201, as per IS specification, Motor winding. Temp rise Shall not exceed 75 deg C over and ambient of 40 OC by resistance method at 245 V, Insulation resistance Shall not be less than Two Mega Ohms (2M Ohms), Leakage current Should not exceed 210 Micro Amp, Power input, W& current, Air Delivery & Fan Speed as per IS:374/1979 with latest amendment, 2 year manufacturer Warranty.			
6.4.1	48" Sweep 5 Star (1200 mm)	Each	2900.00	<b>2949.00</b>
6.4.2	56" Sweep 5 Star (1400 mm)	Each	4000.00	<b>4068.00</b>
6.5	Supplying wall mounting fan suitable to operate at single-phase 230v AC. supply.			
6.5.1	300 mm Sweep	Each	2600.00	<b>2648.00</b>
6.5.2	400 mm Sweep	Each	2800.00	<b>2838.00</b>
6.6	Supplying of ..... capacity window type air conditioner confirming to IS specification suitable for operation on 230 V, 50 Hz single phase, AC. supply with all accessories.			
6.6.1	1 Ton capacity 5 Star	Each	27450.00	<b>29228.00</b>
6.6.2	1.5 Ton capacity 5 Star	Each	32000.00	<b>34268.00</b>
6.6.3	2.00 ton capacity 5 Star	Each	New Item	<b>40932.00</b>
	<b>Inverter Type</b>			
6.6.3	1 Ton capacity 5 Star	Each	29700.00	<b>Deleted</b>
6.6.4	1.5 Ton capacity 5 Star	Each	33800.00	<b>Deleted</b>
6.7	Supplying .....TR split Air conditioners suitable for operation on A/C supply single phase 50 Hz 230 V with hermetically sealed compressor with air cooled condenser, motor capacitor and start run capacitors, relay and over load protector internal unit, with one indoor and one outdoor unit The condenser unit will be placed outside the room on the terrace to avoid noise including standard length of suitable size copper tubing covered with insulation tube. (High wall chorded/cordless) suitable capacity 3 core sheathed/ PVC copper cable and a battery operated wireless remote unit			
	<b>5star</b>			
6.7.1	1 Ton capacity	Each	40000.00	<b>44570.00</b>
6.7.2	1.5 Ton capacity	Each	57000.00	<b>58900.00</b>
6.7.3	2 Ton capacity	Each	64900.00	<b>66762.00</b>

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6.8	Supplying of .. TR Invertor type split Air conditioners suitable for operation on A/C supply single phase 50 Hz 230 V with hermetically sealed inverter compressor with air cooled condenser, latest R410A / R-32 refrigerant fan motor, start & run capacitors, relay & over load protector internal unit, with one indoor & one outdoor unit The condenser unit will be placed outside the room avoid noise including standard length of suitable size copper tubing covered with nitrile rubber insulation tube. suitable capacity 3 core sheathed/ PVC copper cable and a battery operated wireless remote unit.			
	<b>3 star</b>			
6.8.1	1 Ton capacity	Each	37000.00	<b>48308.00</b>
6.8.2	1.5 Ton capacity	Each	42000.00	<b>57812.00</b>
6.8.3	2 Ton capacity	Each	58000.00	<b>71312.00</b>
	<b>5 star</b>			
6.8.4	1 Ton capacity	Each	43000.00	<b>55652.00</b>
6.8.5	1.5 Ton capacity	Each	53000.00	<b>65948.00</b>
6.8.6	2 Ton capacity	Each	66000.00	<b>78872.00</b>
6.9	Supply erection, testing, commissioning of Cassette type split Air conditioners suitable for operation on single/three phase AC supply, hermetically sealed compressor with air cooled condenser motor capacitor start, capacitors run relay and over load protection, one ceiling mounted indoor unit and one outdoor condenser unit including standard accessories covered with insulation tube including battery operated cordless unit			
6.9.1	1 0 TR Cassette 1 Ph	No	62900.00	<b>Deleted</b>
6.9.2	1.5 TR Cassette 1 Ph	No	59700.00	<b>Deleted</b>
6.9.3	2.0 TR Cassette 1 Ph	No	83500.00	<b>92799.00</b>
6.9.4	3.0 TR Cassette 3 Ph	No	114400.00	<b>123579.00</b>
6.9.5	4.0 TR Cassette 3 Ph	No	126900.00	<b>141255.00</b>
6.10	Supplying, Erecting, Testing, commissioning package type Duct able type split Air-Conditioner with microprocessor control, fitted with twin scroll Compressor with R22/Latest Refrigerant The unit shall be pre-wired to operate on 415V, 50Hz AC Supply. The unit shall comprise, Evaporated condenser unit, Indoor-Outdoor Motor Fans, suitable over vent fins made up of Aluminium, Copper Refrigerant coil, Etc.,.. complete and corded control unit			
6.10.1	3TR	No	97750.00	<b>102212.00</b>
6.10.2	4.25TR	No	126400.00	<b>111691.00</b>
6.10.3	5.5TR	No	129200.00	<b>134163.00</b>
6.10.4	8.5TR	No	193700.00	<b>192060.00</b>
6.10.5	11TR	No	251800.00	<b>250026.00</b>
6.10.6	17TR	No	380300.00	<b>370532.00</b>
6.10.7	Capacity: 22TR	No	New Item	<b>468358.00</b>
6.11	Installation charges for 1 to 2 Ton capacity window type Air Conditioner with 50 x 75mm thick teak wood frame of suitable size and allied works complete.	Each	1740.00	<b>1760.00</b>
6.12	Installation charges for split type air conditioner with allied works for one indoor and one outdoor unit is to be mounted on suitable Angle Iron support upto 3.0 Ton split/cassette type A/C.	Each	2900.00	<b>4981.00</b>

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6.13	Supplying and installation of insulated refrigerant copper tubing of 5/8" and 3/8" with polythene foam insulation 3 core 80 stand copper wiring between indoor and outdoor unit Leak testing oil and gas charging for additional piping length of tube.			
6.13.1	Split	m	1155.00	<b>1631.00</b>
6.13.2	Cassette	m	1600.00	<b>1763.00</b>
6.14	Supplying installation testing and commissioning of heavy duty compressor suitable for window/split type A/C.			
6.14.1	1 Ton	Each	8700.00	<b>13602.00</b>
6.14.2	2Ton	Each	9400.00	<b>14052.00</b>
6.14.3	3 Ton	Each	11300.00	<b>17202.00</b>
6.15	Supply and fixing of condensing coil for Split Air Conditioners.			
6.15.1	1 Ton capacity	Each	6380.00	<b>7501.00</b>
6.15.2	1.5 Ton capacity	Each	7260.00	<b>8454.00</b>
6.15.3	2 Ton capacity	Each	8200.00	<b>9706.00</b>
6.16	Supplying and fixing capacitor's (of approved make) for window /split air conditioners.			
6.16.1	25 to 45mfd running capacitor.	Each	484.00	<b>645.00</b>
6.16.2	80 to 200mfd starting capacitor.	Each	580.00	<b>765.00</b>
6.17	Supplying & fixing relay for over load protection for window and split air conditioners.	Each	350.00	<b>585.00</b>
6.18	Supplying and fixing the fan motor for blowers and condenser of 1/5 HP, single shaft/double shaft suitable for split / window air conditioners.	Each	3180.00	<b>5100.00</b>
6.19	Supplying & filling refrigerant (F-22/F/12) for air conditioning equipment's. Which includes the labour & Nitrogen gas for pressure and leak testing.	Per kg	436.00	<b>590.00</b>
6.20	Supplying & fixing of thermostat for window type air conditioner. Multi range 30 to 60 degree Centigrade (without probe), adjustable universal type	Each	510.00	<b>900.00</b>
6.21	Supplying and fixing electro mechanical / Pneumatic time switches.	Each	1260.00	<b>1260.00</b>
6.22	Extra for Fabrication supply and fixing of Stand fabricated using slotted angle /L angle of size 6mm x 50mm for mounting out door/indoor A.C. unit/ Batteries.	Each	2215.00	<b>4576.00</b>
6.23	Supply and fixing of out door condensing unit complete with condensing coil, blower, fan etc., complete suitable for Split Air Conditioners.			
6.23.1	1 Ton	Each	19360.00	<b>24909.00</b>
6.23.2	1.5 Ton	Each	20300.00	<b>29283.00</b>
6.23.3	2 Ton	Each	21300.00	<b>33063.00</b>
6.24	Supply, installation of 5/8" and 7/8" Hard drawn refrigerant pipe and insulation suitable for 11TR duct able split Air-Conditioner.	m	1930.00	<b>2487.00</b>
6.25	Supply, fabrication and installation of GI Ducting Along with flanges, supports & all fixing materials.			
6.25.1	24Gauge	m <sup>2</sup>	1010.00	<b>1731.00</b>
6.25.2	22Gauge	m <sup>2</sup>	1160.00	<b>2057.00</b>
6.26	Supply and installation of Thermal insulation using 13mm nitrile rubber for return air ducts.	m <sup>2</sup>	630.00	<b>1243.00</b>
6.27	Supply and installation of Tarpaulin canvas between the AC duct and AC evaporator unit including accessories.	No	3100.00	<b>4718.00</b>

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6.28	Supply and installation of Acoustic insulation using 50mm thick with 24Kg Density glass wool with 24G aluminium perforated sheet complete.	m <sup>2</sup>	775.00	<b>1263.00</b>
6.29	Supply and installation of Powder coated aluminium diffusers of size 595x595mm for supply & return air.			
6.29.1	Aluminium Diffusers	No	6000.00	<b>6180.00</b>
6.29.2	Collar Dampers	No	New Item	<b>3595.00</b>
6.29.3	GI Mixing Box	No	New Item	<b>7440.00</b>
6.29.4	Flexible Duct Per Mtr	No	New Item	<b>2613.00</b>
6.30	Supply and fixing of powder coated extruded aluminium grill suitable for supply/return air including all fixing hardware etc.,. Complete.			
6.30.1	4" extruded aluminium grill with 15 deg to 30 deg louvers	m	870.00	<b>1457.00</b>
6.30.2	6" extruded aluminium grill with 15 deg to 30 deg louvers	m	1160.00	<b>1456.00</b>
6.31	Supplying & filling refrigerant latest R-410 / R-32 for air conditioning equipment's. Which includes the labour & Nitrogen gas for pressure and leak testing.	Per kg	630.00	<b>666.00</b>
6.32	Installation charges for split type air conditioner with allied works for one indoor and one outdoor unit is to be mounted on suitable Angle Iron support up to 3.0 ton cassette type A/C.	Each	New Item	<b>5958.00</b>
6.33	Supplying of Pedestal fan suitable to operate at single-phase 230v A.C. supply.			
6.33.1	400mm Sweep	Each	New Item	<b>3336.00</b>
6.33.2	450mm Sweep	Each	New Item	<b>4307.00</b>
6.34	Supply and fixing of In door Unit complete with condensing coil, blower, fan etc., complete suitable for Split Air Conditioners.			
6.34.1	1 ton capacity	No	New Item	<b>16161.00</b>
6.34.2	1.5 ton capacity	No	New Item	<b>22209.00</b>
6.34.3	2 ton capacity	No	New Item	<b>28311.00</b>
6.35	Supplying and commisioning of AC Remote	No	New Item	<b>2160.00</b>
<b>Chapter - 7</b>				
<b>GEYSERS &amp; SOLAR WATER HEATERS</b>				
<b>7.0</b>	<b>GEYSERS, HEATERS &amp; SOLAR WATER HEATERS</b>			
7.1	Supplying.....litres capacity vertical/horizontal type wall mounting Electrical water heater with 22 SWG copper/SS sheet metal inner Container tinned inside and anticorrosive paint outside and 20 SWG M.S. sheet metal outer cover filled with glass wool between inner and outer container for thermal insulation complete. The inlet and outlet pipes so arranged that water flow inside results in water to flow out from the inner container without turbulence. The Inner container shall have direct immersion type copper tube nickel plate. 2kW capacity element with a neon indicator fitted with 20A capacity 25 to 85 degree Centigrade range thermostat. The water heater shall completely be wired with 40/0.0076 inch 3 core copper flexible wire of 1.5 meters length and the outer container provided with heavy gauge brackets for wall mounting.			
7.1.1	10 L	Each	6000.00	<b>6480.00</b>
7.1.2	15 L	Each	7000.00	<b>7560.00</b>
7.1.3	25 L	Each	8000.00	<b>10613.00</b>

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7.1.4	35 L	Each	13500.00	<b>14040.00</b>
7.1.5	50 L	Each	16000.00	<b>17575.00</b>
7.1.6	100 L	Each	28000.00	<b>30240.00</b>
7.2	Supplying ...litres capacity vertical/horizontal type wall mounting Electrical water heater with 22 SWG copper/SS sheet metal inner Container tinned inside Fiber body outside, filled with glass wool between inner and outer container for thermal insulation complete. The inlet and outlet pipes so arranged that water flow inside results in water to flow out from the inner container without turbulence. The Inner container shall have direct immersion type copper tube nickel plate. 2kW capacity element with a neon indicator fitted with 20A capacity 25 to 85 degree Centigrade range thermostat. The water heater shall completely be wired with 40/0.0076 inch 3 core copper flexible wire of 1.5 meters length and the outer container provided with heavy gauge brackets for wall mounting.			
<b>5 Star With Fibre body</b>				
7.2.1	25 L	Each	10300.00	<b>12149.00</b>
7.2.2	35 L	Each	14300.00	<b>15348.00</b>
7.2.3	50 L	Each	17100.00	<b>18355.00</b>
7.3	Supplying, installation, testing and commissioning of solar hot water heater comprising of solar Flat Plate Collector (FPC) of size 2120x1040x100mm and stainless steel hot water storage tank with stainless steel heat exchanger absorber made of copper sheet and copper tube of following capacity aluminium box collector with appropriate capacity electrical back up arrangement excluding inlet and out let pipes. SS Model with 100mm thick of 48Kg/M <sup>3</sup> density Rock wool insulation with 22SWG Aluminium cladding.			
7.3.1	100 L	Each	28000.00	<b>32743.00</b>
7.3.2	200 L	Each	48600.00	<b>48480.00</b>
7.3.3	300 L	Each	60000.00	<b>70784.00</b>
7.4	Supplying, installation, testing and commissioning of solar hot water heater comprising of high quality Evacuated Glass Tube (EGT) with absorber coating collector of size 58 x 1800 mm. Inner tank Material-Stainless steel 304-L Grade with Aluminium Stucco cladding made of High quality PUF insulation to minimizes heat loss and hold water Temperature upto 72 Hrs...with appropriate capacity electrical back up arrangement excluding inlet and out let pipes. Fitted with Sacrificial Anode			
7.4.1	100 L - 10 nos Tubes	Each	25100.00	<b>25060.00</b>
7.4.2	200 L- 20 nos Tubes	Each	46000.00	<b>41109.00</b>
7.4.3	300 L - 29 nos Tubes	Each	55000.00	<b>53394.00</b>
<b>Chapter - 8</b>				
<b>NETWORKING &amp; TELECOMMUNICATIONS</b>				
<b>8.0</b>	<b>NETWORKING &amp; TELECOMUNICATION</b>			
8.1	Supplying and drawing UTP-CAT 6E LAN cable.	m	29.00	<b>34.00</b>
8.2	Supplying and drawing PVC flexible one pair telephone unarmoured tinned copper cable.			
8.2.1	1 Pair	m	10.00	<b>13.00</b>
8.2.2	2 Pair	m	14.50	<b>19.00</b>
8.2.3	3 Pair	m	18.00	<b>22.00</b>

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8.2.4	4 Pair	m	28.00	<b>33.00</b>
8.2.5	5 Pair	m	48.00	<b>58.00</b>
8.2.6	20 Pair	m	150.00	<b>181.00</b>
8.2.7	50 Pair	m	292.00	<b>352.00</b>
8.3	Supplying and drawing PVC insulated gas injected physical foam jelly flooded co-axial TV cable.RG-6.	m	35.00	<b>42.00</b>
8.4	Supplying & Fixing of switch mounting rack with power manager & Cable manager.			
8.4.1	4U with 450mm depth	Each	2400.00	<b>2918.00</b>
8.4.2	6U with 450mm depth	Each	3800.00	<b>4657.00</b>
8.4.3	9U with 450mm depth	Each	6200.00	<b>7546.00</b>
8.4.4	12U with 450mm depth	Each	7600.00	<b>9271.00</b>
8.4.5	18U with 650mm depth	Each	16500.00	<b>20411.00</b>
8.4.6	24U with 650mm depth	Each	24000.00	<b>30071.00</b>
8.4.7	27U with 650mm depth	Each	26500.00	<b>32141.00</b>
8.4.8	32U with 650mm depth	Each	28500.00	<b>34411.00</b>
8.4.9	36U with 650mm depth	Each	31300.00	<b>37861.00</b>
8.4.10	42U with 650mm depth	Each	34500.00	<b>41913.00</b>
8.4.11	42U with 800mm depth	Each	38000.00	<b>46743.00</b>
8.5	Supplying & Fixing of Power strip	Each	1000.00	<b>1233.00</b>
8.6	Supplying of shelf	Each	795.00	<b>957.00</b>
8.7	Supplying & fixing of Castor wheels to the Shelf (set of 4)	Each	1000.00	<b>1224.00</b>
8.8	Supplying & Fixing of Fan	Each	775.00	<b>931.00</b>
8.9	Supplying fixing of Network Switches			
8.9.1	48 Port Gigabyte (manageable)	Each	40000.00	<b>54333.00</b>
8.9.2	24 Port Gigabyte (manageable)	Each	35000.00	<b>46053.00</b>
8.9.3	10 Port Gigabyte (manageable)	Each	18000.00	<b>22481.00</b>
8.9.4	48 Port 10/100 Switch	Each	14000.00	<b>16935.00</b>
8.9.5	24 Port 10/100 Switch	Each	4000.00	<b>5343.00</b>
8.9.6	16 Port 10/100 Switch	Each	2300.00	<b>2809.00</b>
8.9.7	8 Port 10/100 Switch	Each	950.00	<b>1188.00</b>
8.9.8	5 Port 10/100 Switch	Each	750.00	<b>898.00</b>
8.9.9	48 Port 10/100/1000 Switch	Each	18700.00	<b>22593.00</b>
8.9.10	24 Port 10/100/1000 Switch	Each	6800.00	<b>8241.00</b>
8.9.11	16 Port 10/100/1000 Switch	Each	5900.00	<b>7156.00</b>
8.9.12	8 Port 10/100/1000 Switch	Each	2800.00	<b>3437.00</b>
8.10	Supplying & fixing of I/O socket with back box			
8.10.1	Single I/O	Each	330.00	<b>405.00</b>
8.10.2	Double I/O	Each	600.00	<b>727.00</b>
8.11	Supplying & Fixing of ... ms Cat 6 Patch Cable			
8.11.1	1 m	Each	158.00	<b>190.00</b>
8.11.2	2 m	Each	238.00	<b>286.00</b>
8.11.3	3 m	Each	306.00	<b>369.00</b>
8.12	Supplying & Fixing of Patch panel for LAN cabling			
8.12.1	48 Port 10/100 patch panel	Each	13500.00	<b>15693.00</b>
8.12.2	24 Port 10/100 patch panel	Each	3800.00	<b>4258.00</b>
8.12.3	16 Port 10/100 patch panel	Each	3000.00	<b>3292.00</b>
8.12.4	48 Port 10/100/1000 patch panel	Each	22500.00	<b>26733.00</b>
8.12.5	24 Port 10/100/1000 patch panel	Each	7000.00	<b>8260.00</b>
8.12.6	16 Port 10/100/1000 patch panel	Each	6500.00	<b>8053.00</b>
8.13	Supplying and fixing of MDF krone junction box with KRONE Module / Telephone cable termination.			
8.13.1	10 Pair	RMt	275.00	<b>310.00</b>
8.13.2	20 Pair	RMt	350.00	<b>362.00</b>
8.13.3	30 Pair	RMt	450.00	<b>551.00</b>
8.13.4	50 pair	RMt	550.00	<b>620.00</b>

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<b>Chapter - 9</b>				
<b>UPS, VOLTAGE STABILIZERS, BATTERIES &amp; ACCESSORIES</b>				
<b>9.0</b>	<b>UPS, VOLTAGE STABILIZERS, BATTERIES &amp; ACCESSORIES</b>			
9.1	Supplying, erecting, testing and commissioning of voltage stabilizer suitable for 170 to 270 v input and load variation from no load to full load, with over load protection, spike suppression, operating at 00 C to 400 C. Range etc., complete.			
9.1.1	3kVA Capacity	Each	3840.00	<b>3567.00</b>
9.1.2	4kVA Capacity	Each	4180.00	<b>4434.00</b>
9.1.3	5kVA Capacity	Each	4510.00	<b>4929.00</b>
9.2	Supplying, erecting, testing & commissioning of OFF- LINE UPS system suitable for operation on 230V, 50Hz, A/C supply, with all accessories complete and Excluding batteries and wiring complete.			
9.2.1	1 kVA OFF LINE UPS	Each	13200.00	<b>13582.00</b>
9.2.2	1.5 kVA OFF LINE UPS	Each	17800.00	<b>18245.00</b>
9.2.3	2 kVA OFF LINE UPS	Each	20800.00	<b>21120.00</b>
9.2.4	3 kVA OFF LINE UPS	Each	31100.00	<b>31072.00</b>
9.2.5	5 kVA OFF LINE UPS	Each	37100.00	<b>38661.00</b>
	Note: For item 10.2 batteries are required for backup power supply- 1) 1 kVA off line UPS one hour backup : 2 x 40 AH batteries. 2) 2 kVA off line UPS one hour backup : 3 x 80 AH batteries. 3) 5 kVA off line UPS one hour backup : 6 x 80 AH batteries.			
9.3	Supplying, erecting, testing & commissioning of ON-LINE UPS system suitable for operation on 230V, 50Hz, A/C supply, with isolation transformer all accessories complete and Excluding batteries and wiring complete.			
9.3.1	1 kVA ON LINE UPS	Each	31000.00	<b>33198.00</b>
9.3.2	3 kVA ON LINE UPS	Each	42480.00	<b>47973.00</b>
9.3.3	5 kVA ON LINE UPS	Each	74250.00	<b>79172.00</b>
9.3.4	7.5 kVA ON LINE UPS	Each	89100.00	<b>94767.00</b>
9.3.5	10 kVA ON LINE UPS	Each	118800.00	<b>119023.00</b>
9.4	Supplying, installation, testing & commissioning of 12V ..AH batteries in poly propylene container for D.G. sets. Low maintenance batteries, plate type.			
9.4.1	40 AH capacity	Each	8800.00	<b>10730.00</b>
9.4.2	60 AH capacity	Each	12700.00	<b>15363.00</b>
9.4.3	75 AH capacity	Each	13400.00	<b>16195.00</b>
9.4.4	100 AH capacity	Each	15700.00	<b>18927.00</b>
9.4.5	120 AH capacity	Each	18400.00	<b>22135.00</b>
9.4.6	150 AH capacity	Each	22500.00	<b>27006.00</b>
9.4.7	200 AH capacity	Each	28000.00	<b>33540.00</b>
9.5	Supplying, installation, testing & commissioning of 12V DC, AH batteries in poly propylene container for U.P.S. Sealed maintenance free batteries.			
9.5.1	7 AH capacity	Each	2000.00	<b>2050.00</b>
9.5.2	18 AH capacity	Each	3100.00	<b>3582.00</b>
9.5.3	26 AH capacity	Each	3500.00	<b>4500.00</b>
9.5.4	42 AH capacity	Each	5000.00	<b>7227.00</b>
9.5.5	60 /65 AH capacity	Each	7500.00	<b>9565.00</b>
9.5.6	75/80 AH capacity	Each	8700.00	<b>10748.00</b>

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9.5.7	100 AH capacity	Each	10800.00	<b>13898.00</b>
9.5.8	120 AH capacity	Each	11800.00	<b>15783.00</b>
9.5.9	150 AH capacity	Each	14100.00	<b>19436.00</b>
9.5.10	200AH capacity	Each	17500.00	<b>24966.00</b>

## Chapter - 10

### DIESEL GENERATOR SETS

10.0	DIESEL GENERATOR SET			
10.1	Supplying, installing, testing and commissioning of Diesel Generator set with following specifications. Power rating as per standard reference condition as per-BS 5514/ISO 3046/ ISO 8528 & IS 1002/ISO 3046 Generator set specifications.			
	Engine: Diesel generating set are rated at 1500RPM and conform to ISO 8528 specifications. The engines are radiator cooled, four stroke and multi cylinder, conforming to ISO 3046. The scope of supply includes: Electrical starter motor 12V DC Battery charging alternator, Bosch fuel system with mechanical governor, A1 Class. Spin-on lube oil filter, Spin-on dual fuel filter with water separator, Turbocharger, Charge air cooler, Silencer (Hospital grade), Dry type air cleaner, Shutoff coil, Flywheel and flywheel housing, First fill of lube oil and coolant, Safety for low lube oil pressure, Safety for high water temperature, Permissible overload of 10% for one hour in 12 hours of operation			
	Capacity of Fuel Tank: Fuel tank suitable for 8 hours of operation			
	Alternator: Alternator is suitable for operation at 1500 RPM, 415 V, 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire systems, conforming to IS/IEC 60034-1. The Alternator is brush less type, screen protected, revolving field, self excited, self regulated through an AVR. The alternator shall have $\pm 1.0\%$ Voltage regulation (max) in static conditions- IP: 23 protections with insulation class F&H.			
	Mounting arrangement: Engine and alternator are mounted on a common MS fabricated base frame with AVM pads.			
	Control Panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish. The control panel consists of the following parts:- PS0500 Controller, Aluminium bus bars with suitable capacity within/outgoing terminals, Indicating IA for 'Load On' and 'Set Running', Instrument fuses duly wired and ferruled, MCCB of suitable rating with overload and short circuit protections.			

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	<p>Genset Controller: microprocessor based generator set monitoring and control system. The control provides a simple operator interface to the generator set, manual and remote start/ stop control, shutdown fault indication, and an LCD hour counter. The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. This control has been designed and tested to meet harsh environment in which gensets are typically applied. Features, Functions, protections 16 character x 2 line alphanumeric LCD display with LED Backlight</p>			
	<p>Operator interface, Provide a record of most recent fault conditions. Fault history stored in the control non volatile memory, Provide Alternator Data. Voltage (1 ph or 3 ph line to line and line to neutral voltage, Current (1 ph or 3 ph), kVA (3 ph and total), Frequency, Provide Engine Data, Starting battery voltage, Engine running hours, Engine Temp, Engine oil pressure, Control includes provision for Service adjustment and calibration of DG control functions, Voltage, frequency selection, Configurable input and output set up, Meter calibration, Engine controls, Power Start operates on 12 VDC batteries,-Auto start mode accepts a ground signal from remote devices to automatically start the DG set The remote start will also wake up the control system from sleep mode.</p>			
	<p>Engine Starting -The control system supports automatic engine starting, Primary and back up start disconnects are achieved by battery charging alternator feedback or main alternator output frequency. Controller provide configurable time delay of 0-300 sees to start after remote start signal and time delay of 0-600secs prior to shut down after stop signal. Sleep mode increase battery life. Configurable current settings from low to minimize current draw when genset is not working. Engine Protective functions include, Configurable alarm output, Emergency stop: Annunciated whenever an emergency stop signal is received by the control. Low lube oil pressure warning and Shutdown, High engine water temp warning / Shutdown, Low coolant temp warning, Sensor failure indication, Low and high battery voltage warning, Weak battery warning, Fail to start shut down, Cracking lockout: Control will not allow the starter to engage or to crank the running engine Cyclic cranking: Configurable for the number of starting cycle, (1 to 7) and duration of crank and rest periods. Alternator Protective functions includes, - High and Low AC voltage shut down, Under and Over frequency shutdown / warning, Loss of sensing voltage input shut down.</p>			

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	Acoustic enclosure: The acoustic enclosure shall be made of 1.6 mm thick CRCA sheets in suitable approved shade and a structural/ sheet metal base frame painted in black. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75dBA at 1 m sound levels specified by Ministry of Environment & Forest The enclosure has the following features: Specially designed to meet stringent MOEF/CPCB norms of 75dBA @ 1 m at 75% load under free field conditions, Two point lifting for easy handling at customer site, Designed to have optimum serviceability, Air inlet louvers specially designed to operate at rated load made on special purpose CNC machines for consistency in quality and workmanship, Powder coated for long lasting service life and superior finish, With UV resistant powder coating, can withstand extreme environment,			
	Use of special hardware for longer life, Insulation material meets exacting IS 8183 specifications for better sound attenuation, Flush styling - no projections, Fluid drains for lube oil and fuel, Fuel filling point inside the enclosure. The complete set shall have sufficient safety and adhere to NEC, NBC 2016, IEC, CPWD specifications, PCB norms and KSGEI Acts and Rules.			
10.1.1	15 kVA/12kW	Set	274500.00	<b>352568.00</b>
10.1.2	20 kVA/16kW	Set	313400.00	<b>400646.00</b>
10.1.3	25 kVA/20kW	Set	338400.00	<b>440711.00</b>
10.1.4	30 kVA/24kW	Set	379500.00	<b>465433.00</b>
10.1.5	40 kVA/32kW	Set	476800.00	<b>540497.00</b>
10.1.6	50 kVA/40kW	Set	480700.00	<b>608465.00</b>
10.1.7	62.5 kVA/50kW	Set	514500.00	<b>618585.00</b>
10.1.8	82.5 kVA/66kW	Set	692500.00	<b>772915.00</b>
10.1.9	100 kVA/80 kW	Set	777900.00	<b>907005.00</b>
10.1.10	125 kVA/100 kW	Set	790900.00	<b>924715.00</b>
10.1.11	180 kVA/144 kW	Set	1233300.00	<b>1405706.00</b>
10.1.12	200 kVA/160kW	Set	1383900.00	<b>1530650.00</b>
10.1.13	250 kVA/200 kW	Set	1723600.00	<b>1834250.00</b>
10.1.14	320 kVA/256 kW	Set	2354600.00	<b>2729870.00</b>
10.1.15	400 kVA/320 kW	Set	2790200.00	<b>3023350.00</b>
10.1.16	500 kVA/400 kW	Set	3308200.00	<b>3573625.00</b>

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10.2	Supply, Erection, testing and commissioning of AMF panel suitable for .....kVA DG set. The panel is of cubical type base/floor mounting control panel with hinged doors, undrilled bottom gland plate, aluminium Bus Bar with the accommodation for .....A 4 pole contactor for alternator with thermal O/L relay,..... A 4 pole contactor for mains, HRC fuse for short circuit protection, Microprocessor based AMF module with supply failure timer, Restoration timer, 3 impulse automatic engine start/stop logic, Mains/generator voltage, ....capacity bypass switch and frequency sensing, PCC 1301controller with water temperature/Lube oil pressure/engine speed, Voltage/ampere/Frequency/ kVA, Running-hour count, No of starts, Fault indication, over / under speed, Fails to start, Low oil pressure, High engine temperature, Under/over voltage, over current, Earth fault relay, with indications for Mains on, Load on Mains, Battery charger on Push buttons AMF module by pass Mode, Battery charger unit with inbuilt Auto/Manual and Flat/Boost facility. The complete set shall have sufficient safety and adhere to NEC, NBC 2016, IEC, CPWD specifications, PCB norms and KSGEI Acts and Rules.			
10.2.1	Upto 62.50 KVA	Each	<b>89500.00</b>	<b>75900.00</b>
10.2.2	62.5KVA to 125 KVA	Each	<b>132100.00</b>	<b>107525.00</b>
10.2.3	125KVA to 250KVA	Each	<b>203200.00</b>	<b>189750.00</b>
10.2.4	250KVA to 500KVA	Each	<b>348400.00</b>	<b>474375.00</b>
<b>Chapter - 11</b>				
<b>LUMINAIRES / LIGHTING FIXTURES &amp; ACCESSORIES</b>				
<b>11.0</b>	<b>LUMINAIRS / LIGHT FIXTURES &amp;ACCESSORIES</b>			
	<b>LED Indoor</b>			
11.1	Supplying & fixing - flexible LED Strip Light ..... W Power consumption in 5 ms length CCT6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver non integrated, with PF > 0.95, power loss should< 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved with 2 years Warranty against any manufacturing defect working under standard electrical condition.	m	1400.00	<b>1787.00</b>
11.2	Supplying & fixing retrofit type-PL- LED Lamp ..... W LED linear source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to275 V. Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.2.1	8-9 W	Each	350.00	<b>613.00</b>

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11.2.2	18-20 W	Each	425.00	<b>691.00</b>
11.3	Supplying of .....feet -PVC Batten with integrated LED tube .... W with high quality diffuser with Life of 25000 burning hours & 70% lumen maintenance with CRI > 80. Power Input: 220-240V@ 50/60Hz & Power factor >0.9 along with CE approved. 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.3.1	LED light fitting 1 x 2' - 9/10 W	Each	250.00	<b>496.00</b>
11.3.2	LED light fitting 1 x 4' - 20/22 W	Each	375.00	<b>740.00</b>
11.3.3	LED light fitting 1 x 4' - 36/40 W	Each	625.00	<b>1197.00</b>
	<b>LED Down light</b>			
11.4	Supplying of recess mounting non integrated type LED down light..... W luminaire comprising of pressure decast/ extruded aluminium housing, with spring loaded false ceiling c/a, LED of Power/COB with CCT 6500 degree K, CRI> 70%. efficacy >100 lumen per W, 120degree beam spread, life> 25000 burning hours and Compliance to IS10322/IEC 60598, LM 79 & LM 80. The lamp compartment is enclosed with anti glare opal diffuser which enhances the lighting level. LED's are driven by HF electronic driver integrated in a separate control gear assembly., with PF > 0.95, power loss should< 5% of lamp Wage, short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.4.1	5-6W	Each	1120.00	<b>1217.00</b>
11.4.2	10-12W	Each	1360.00	<b>1478.00</b>
11.4.3	15-18W	Each	2000.00	<b>2174.00</b>
11.5	Supply of round/square recess/surface mounted rolling type LED Down light with ..... W GU 10 LED Lamp Rib Fabricated from diecast aluminium with white powder coated prewired to mains connector & has swivelling unit of aluminium die cast eye ball & LED Lamp position retained by circular wire spring, with Life of 25000 burning hours & 70% lumen maintenance with CRI > 80. Power Input: 220-240V @50/60Hz & Power factor >0.9 along with CE approved. 2years Warranty against any manufacturing defect working under standard electrical condition			
11.5.1	LED square or round down light 5-6W	Each	504.00	<b>546.00</b>
11.5.2	LED square or round down light 10-12W	Each	768.00	<b>835.00</b>
11.5.3	LED square or round down light 15-18W	Each	1150.00	<b>1249.00</b>

			SR 2019-20	SR 2022-23
11.6	Supplying of recess mounting non integral type ..... LED w luminaire comprising of pressure decast/extruded aluminium housing, with spring loaded false ceiling clA, Power LEDs with CCT 6500 degree K, CRI> 70%. efficacy > 100 lumen per W, 120degree beam spread, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The lamp compartment is enclosed with anti glare opal diffuser which enhances the lighting level LEDs are driven by HF electronic driver integrated in a separate control gear assembly., with PF > 0.95, power loss should< 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.6.1	LED modular down light 1'x1' 34-22 W	No	2642.00	<b>2869.00</b>
11.6.2	LED modular down light 2'x2' /1'x4' 34-36 W	No	5200.00	<b>5651.00</b>
11.6.3	LED modular down light 2'x2' /1'x4'42-55 W	No	5600.00	<b>6086.00</b>
	<b>LED Post Top Lantern GARDEN.</b>			
11.7	Supply of LED pole mounting type post top lantern with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate/ clear glass material, delivering superior light outputRated life Burning Hrs 50000 hr@ Lumen Maintenance of 70%, CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor>0.9 with mains, Surge Protection- Min 5KV along with Over voltage/Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/1 EC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in- house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree/Nichia/ Lumileds/Osram make LED Source.			
11.7.1	LED Post Top Lantern with 25 W	No	5600.00	<b>7173.00</b>
11.7.2	LED Post Top Lantern with 35 W	No	6400.00	<b>7912.00</b>
	<b>LED Street light.</b>			

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11.8	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with .....W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 2 Years against any manufacturing defect <del>working under standard electrical conditions as mentioned</del>			
11.8.1	LED Streetlight 25W	No	1840.00	<b>2000.00</b>
11.8.2	LED Streetlight 40W	No	3360.00	<b>3651.00</b>
11.8.3	LED Streetlight 70W	No	5480.00	<b>5955.00</b>
11.8.4	LED Streetlight 90 W	No	7160.00	<b>7777.00</b>
11.8.5	LED Streetlight 120 W	No	9200.00	<b>9998.00</b>
11.8.6	LED Streetlight 150 W	No	12300.00	<b>13432.00</b>
11.8.7	LED Streetlight 170 W	No	16400.00	<b>17823.00</b>
11.8.8	LED Streetlight 200 W	No	17500.00	<b>19040.00</b>
	<b>LED Flood Light.</b>			

			SR 2019-20	SR 2022-23
11.9	Supply of LED floodlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate/clear glass material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mauling with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100 V to 270V 50/60Hz application. Compliance to IS 10322/ IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with ..... W System Power consumption. LED Efficiency> 130lm/w, nominal CRI >75. Luminaire manufacturer should have in- house facility accredited by NABL / CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark / name shall be Engraved / Embossing on the die cast housing / Body part Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree (Nichia /			
11.9.1	LED Floodlight 70W	Each	6800.00	<b>7390.00</b>
11.9.2	LED Floodlight 100W	Each	7500.00	<b>8172.00</b>
11.9.3	LED Floodlight 120W	Each	8800.00	<b>9563.00</b>
11.9.4	LED Floodlight 150W	Each	10250.00	<b>11128.00</b>
11.9.5	LED Floodlight 180W	Each	17600.00	<b>19127.00</b>
11.9.6	LED Floodlight 200W	Each	18000.00	<b>19562.00</b>
11.9.7	LED Floodlight 240W	Each	18400.00	<b>19996.00</b>
11.10	Supplying & fixing of Surface mounting type retrofit type -LED tube ..... W comprising of LED linear source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
	Glass Casing			
11.10.1	8W-10W (T8)	Each	140.00	<b>208.00</b>
11.10.2	18W-20W (T8)	Each	250.00	<b>299.00</b>
	Polycarbonate/OPAL Acrylic Casing			
11.10.4	8W-10W (T8)	Each	325.00	<b>478.00</b>
11.10.5	18W-20W (T8)	Each	425.00	<b>622.00</b>

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11.11	Supplying & fixing of retrofit type - LED bulb ..... W with OPAL acrylic diffuser comprising of LED source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.11.1	3 W 6500K	Each	85.00	<b>122.00</b>
11.11.2	5 W 6500K	Each	95.00	<b>136.00</b>
11.11.3	7W, 6500K	Each	105.00	<b>148.00</b>
11.11.4	9W, 6500K	Each	115.00	<b>160.00</b>
11.11.5	12W, 6500K	Each	165.00	<b>237.00</b>
11.11.6	15W, 6500K	Each	215.00	<b>337.00</b>
11.11.7	18W, 6500K	Each	255.00	<b>436.00</b>
11.12	Supply of LED Bollard light fitting of ...W with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate/clear glass material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/Overload, short circuit/ miss-wiring protection. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB, with 2 years Warranty against any manufacturing defect working under standard electrical condition.			
11.12.1	8W 0.5 m Height	Each	3100.00	<b>3391.00</b>
11.12.2	8W 1 m Height	Each	3300.00	<b>3651.00</b>
11.13	Supplying and fixing of slim patty fitting, made out of CRCA Sheet metal body with locking type holder completely wired. Excluding Ballast & Fluorescent Tube.			
11.13.1	1 x 2' Tube light fitting.	Each	150.00	<b>162.00</b>
11.13.2	1 x 4' Tube light fitting.	Each	225.00	<b>243.00</b>
11.14	Supplying and fixing of slim box fitting, made out of CRCA Sheet metal body with locking type holder completely wired. Excluding Ballast & Fluorescent Tube.			
11.14.1	1 x 2' Tube light fitting.	Each	200.00	<b>216.00</b>
11.14.2	1 x 4' Tube light fitting.	Each	300.00	<b>324.00</b>
11.14.3	2 x 4' Tube light fitting.	Each	New Item	<b>390.00</b>
<b>Chapter - 12</b>				
<b>MAINTENANCE WORKS</b>				
<b>12.0</b>	<b>MAINTENANCE WORKS</b>			
12.1	Supplying and fixing one of 230 V bell or buzzer and a flush type bell push with gang box fixed on necessary wooden or rawl plugs using NF screws.	Each	160.00	<b>175.00</b>

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12.2	Supplying and fixing one of 230 V Ding dong bell and a flush type bell push with gang box fixed on necessary wooden or rawl plugs using NF screws with Remote.			
12.2.1	Ding Dong Bell	Each	220.00	<b>239.00</b>
12.2.2	Musical	Each	394.00	<b>422.00</b>
12.2.3	Remote	Each	1034.00	<b>1115.00</b>
12.3	Supplying and fixing/replacing condenser for ceiling fan/MV/SV/MH and other luminaries.			
12.3.1	upto 4mfd	Each	114.00	<b>125.00</b>
12.3.2	8mfd	Each	142.00	<b>158.00</b>
12.3.3	10mfd	Each	166.00	<b>180.00</b>
12.3.4	15mfd	Each	210.00	<b>225.00</b>
12.3.5	20mfd	Each	277.00	<b>305.00</b>
12.3.6	33mfd	Each	427.00	<b>464.00</b>
12.3.7	42mfd	Each	468.00	<b>508.00</b>
12.4	Rewinding a ... mm ceiling fan/after using necessary gauge annealed and insulated copper wire with necessary insulating, separators vibration arresting shellac, etc including replacement of bearings if any transportation to and from the spot to workshop inclusive of releasing the refixing.			
12.4.1	900mm	Each	512.00	<b>546.00</b>
12.4.2	1050mm	Each	638.00	<b>692.00</b>
12.4.3	1200mm	Each	693.00	<b>751.00</b>
12.4.4	1400mm	Each	726.00	<b>786.00</b>
12.5	Releasing the existing fan dismantling testing painting after removing the existing painting by scraping and cleaning (spray method) not less than 2 coats of approved make enamel paint to a ceiling fan and wiring and fixing of the same.	Each	306.00	<b>332.00</b>
12.6	Supplying and replacing ceiling fan regulator 900mm to 1500mm.	Each	172.00	<b>189.00</b>
12.7	Releasing an unserviceable thermostat and providing in its place a new 20 A capacity 25 inch to 85 inch range thermostat.	Each	292.00	<b>318.00</b>
12.8	Releasing the existing fan checking, testing and installation at the same place.	Each	31.00	<b>35.00</b>
12.9	Releasing the existing fan checking, testing and installation at the New place.	Each	68.00	<b>72.00</b>
12.10	Releasing the existing fan and refixing the same in the new place with cIA without 'S' hook complete.	Each	77.00	<b>80.00</b>
12.11	Releasing the existing FTL Fitting all capacities, checking, testing and installing at same place.	Each	33.00	<b>38.00</b>
12.12	Supplying and fixing/replacing of fluorescent tube.			
12.12.1	18 to 40W	No	83.00	<b>92.00</b>
12.12.2	65 to 80W	No	174.00	<b>191.00</b>
12.13	Supplying and fixing/replacement of heating element for Geyser/Boiler.			
12.13.1	2kW Capacity	No	953.00	<b>1034.00</b>
12.13.2	3kW Capacity	No	1019.00	<b>1100.00</b>
12.14	Supplying and fixing/replacement of pressure relief valve suitable for Geyser.	No	557.00	<b>609.00</b>
12.15	Supplying and fixing/replacement of Round/ Conical/ Diamond shaped HDPE Doom suitable for 125/160W post top lamp fittings.	No	2643.00	<b>2884.00</b>

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12.16	Supplying and fixing 6A capacity 4 way universal shutter type spike buster suitable to operate on 230V 50Hz AC Supply.	No	674.00	<b>724.00</b>
12.17	Painting of existing street light pole after scrapping the old paint and painted with suitable colour enamel/Silver paint including coping/footing of the pole.			
12.17.1	upto 5 m street light pole.	No	550.00	<b>602.00</b>
12.17.2	Above 5.5 to 7.5 m street light pole.	No	682.00	<b>748.00</b>
12.17.3	8 m and above street light pole.	No	770	<b>826.00</b>
	<b>Accessories</b>			
12.18	Supplying and fixing of T5 Fluorescent Tube with 14W power consumption with low 3mg Mercury content & below 40% glass content than TS lamp & 20% less phosphor coating than T8 with initial lumen on 1350 (for 3000-6500 deg Kelvin), rated Avg life (12 Hr. Cycle) of greater than 35000 burring hours. Operating voltage range from 180V to 265V, 50Hz AC power Supply			
12.18.1	14 W Lamp	Each	121.00	<b>132.00</b>
12.18.2	28 W Lamp	Each	158.00	<b>172.00</b>
12.18.3	54 W High Output Lamp	Each	250.00	<b>269.00</b>
12.19	Supplying and fixing of Electronic Ballast suitable for T5 Lamp with housing made of Pre-coated steel/PC, Operating voltage range from 180V to 265V, 50Hz AC power Supply flicker free warm start with over voltage protection, Inrush current protection, De-activated lamp protection& End of Lamp life protection with PF> 0.95 & TC(degC) > 65 deg C compliance to EN 61347-2-3 (Safety), EN60929(Performance), EN55015(EMI/RFI), EN61000-3-2 (Harmonics), EN 61547 (Surge). Operating voltage range from 180V to 265V, 50Hz AC power Supply.			
12.19.1	1 x 14 W	Each	450.00	<b>484.00</b>
12.19.2	2 x 14 W	Each	780.00	<b>840.00</b>
12.19.3	1 X 24W	Each	850.00	<b>915.00</b>
12.19.4	2x 24 W	Each	1600.00	<b>1725.00</b>
12.19.5	2x 54 W	Each	4850.00	<b>5235.00</b>
12.20	Supplying and fixing of T8 36/40W Fluorescent Tube with 36W power consumption with initial lumen of 2750 (3000 deg K / 4000 deg K) with rated avg life of greater than 10000 hrs. Operating voltage range from 180V to 265V. 50Hz AC power Supply	No	53.00	<b>59.00</b>
12.21	Supplying and fixing of 5'-80 W of T8 Fluorescent Tube with 54W power consumption with low 3mg Mercury content less phosphor coating Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	470.00	<b>510.00</b>
12.22	Supplying and fixing of Electronic Ballast suitable for T8 Lamp with housing made of Pre-coated steel/PC, Operating voltage range from 180V to 265V. 50Hz AC power Supply flicker free warm start with over voltage protection, Inrush current protection, De-activated lamp protection & End of Lamp life protection with PF> 0.95 & TC(deg C) > 65 deg C. Operating voltage range from 180V to 265V, 50Hz AC power Supply.			
12.22.1	1 x 18/22 W	Each	250.00	<b>280.00</b>
12.22.2	1 x 36/40 W	Each	375.00	<b>410.00</b>
12.22.3	2 x 36/40 W	Each	725.00	<b>785.00</b>

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12.22.4	1 x 80 W	Each	1800.00	<b>1940.00</b>
12.23	Supplying and fixing of 20/40 W heavy duty open construction Ferromagnetic copper ballast for fluorescent tubes: Supplying and fixing of 20/40 W heavy duty open construction Ferromagnetic copper ballast for fluorescent tubes, Class H Insulated copper wire, Vacuum impregnated high quality with Low loss silicon steel lamination operated on 240V,50Hz supply with IEC 60920 (Safety) & IEC 60921 (Performance). Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	275.00	<b>300.00</b>
12.24	Supplying and fixing 65/80 W heavy duty open construction ferromagnetic copper ballast for fluorescent tubes: 65/80 W heavy duty open construction Ferromagnetic copper ballast for fluorescent tubes, Class H Insulated copper wire, Vacuum impregnated high quality with Low loss silicon steel lamination operated on 240V,50Hz supply with IEC 60920 (Safety) & IEC 60921(Performance). Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	470.00	<b>510.00</b>
12.25	Supplying of patty fitting, made out of CRCA Sheet metal body with locking type holder completely wired with HF Electronic Ballast, Operating voltage range from 180V to 265V, 50Hz AC power supply excluding Tube.			
12.25.1	1 x 2' Tube light fitting.	Each	250.00	<b>275.00</b>
12.25.2	1 x 4' Tube light fitting.	Each	375.00	<b>310.00</b>
12.26	Supplying of box fitting, made out of CRCA Sheet metal body with locking type holder completely wired with HF Electronic Ballast, Operating voltage range from 180V to 265V, 50Hz AC power supply excluding Tube.			
12.26.1	1 x 2' Tube light fitting.	Each	325.00	<b>360.00</b>
12.26.2	1 x 4' Tube light fitting.	Each	450.00	<b>485.00</b>
12.27	Supplying & Fixing of Special Type pigmy and candle lamp. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	15.00	<b>18.00</b>
12.28	Supplying & Fixing of Special Type Halogen LA Operating voltage range from 180V to 265V, 50Hz AC power Supply			
12.28.1	500 W	Each	77.00	<b>85.00</b>
12.28.2	100 W	Each	95.00	<b>100.00</b>
12.29	Supplying & Fixing of 80W Mercury Vapour lamp with E27 Base, Lumen output greater than 3500 lumen & CRI 45.Avg Burning life greater than 20,000 hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	165.00	<b>180.00</b>
12.30	Supplying & Fixing of 125W Mercury Vapour lamp with E27 Base, Lumen output greater than 6000 lumen & CRI 45.Avg Burning life greater than 20,000 hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	180.00	<b>192.00</b>
12.31	Supplying & Fixing of 160W Mercury Vapour lamp with E27 Base, Lumen output greater than 12500 lumen & CRI 45 Avg Burning life greater than 20,000 hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	245.00	<b>268.00</b>

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12.32	Supplying & Fixing of 250W Mercury Vapour lamp with E27 Base, Lumen output greater than 22000 lumen & CRI 45.Avg Burning life greater than 20,000 hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	355.00	<b>390.00</b>
12.33	Supplying & Fixing of 400W Mercury Blended lamp with E27 Base, Lumen output greater than 3000 lumen & CRI 52.Avg Burning life greater than 8000 hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	476.00	<b>512.00</b>
12.34	Supplying & Fixing of 70W Metal Halide single end tubular Lamp with lumen output of 6400 lumens & CCT 3000/4000 & CRI 80+ & Avg life greater than 15000 to 20,000 Hrs. With Cap Base E27. Operating voltage range from 180V to 265V,50Hz AC power Supply	No	974.00	<b>1045.00</b>
12.35	Supplying & Fixing of 150W Metal Halide single end tubular Lamp with lumen output of 14500 lumens (150W) & CCT 3000/4000 & CRI 80+ & Avg life greater than 15000 to 20,000 Hrs. with Cap Base E40 Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	974.00	<b>1045.00</b>
12.36	Supplying & Fixing of 250W Metal Halide single end tubular Lamp with lumen output of 25000 lumens & CCT 3000 & CRI 80+ & Avg life greater than 24,000 Hrs. with Cap Base E40	No	1098.00	<b>1192.00</b>
12.37	Supplying & Fixing of 400W Metal Halide single end tubular Lamp with lumen output of 25000 lumens & CCT 3000 & CRI 80+ & Avg life greater than 20,000 Hrs. with Cap Base E40. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	1186.00	<b>1298.00</b>
12.38	Supplying & Fixing of 70W Metal Halide Double Ended Lamp with lumen output of 5000 lumens & CCT 3000/4000 & CRI 65+ & Avg life greater 9000 Hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	528.00	<b>579.00</b>
12.39	Supplying & Fixing of 150W Metal Halide Double Ended Lamp with lumen output of 13000 lumens (> 3000k to 4200K) & CCT 3000/4000 & CRI 65+ & Avg life greater 9000 Hrs. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	711.00	<b>778.00</b>
12.40	Supplying & Fixing of 70W/150W High Pressure Sodium Vapour tubular Lamp with Xenon filled gas with luminous efficiency of greater than 140 lumen/W or initial lumens of greater than 6500 lumens & avg rated life greater than26000 hrs. & minimum starting temperature of (-) 40 degC & Hot restrike time <30 Sec with CCT 2000K. Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	974.00	<b>1065.00</b>
12.41	Supplying & Fixing of 250W/400W High Pressure Sodium Vapour tubular Lamp with Xenon filled gas with luminous efficiency of greater than 140 lumen/W or initial lumens of greater than 55000 lumens & avg rated life greater than26000 hrs. & minimum starting temperature of(-) 40 deg C& Hot restrike time <60 Sec with CCT 2000K . Operating voltage range from 180V to 265V, 50Hz AC power Supply	No	1811.00	<b>1975.00</b>

			SR 2019-20	SR 2022-23
12.42	Supplying & Fixing of High Intensity Discharge Electro Magnetic ballast suitable for Mercury Vapour Lamp with Class H insulated copper wire. Operating voltage range from 180V to 265V, 50Hz AC power Supply			
12.42.1	Ballast/Choke for Mercury Vapour Lamp- 125 W	No	1132.00	<b>1224.00</b>
12.42.2	Ballast/Choke for Mercury Vapour Lamp- 250 W	No	2115.00	<b>2290.00</b>
12.42.3	Ballast/Choke for Mercury Vapour Lamp- 400 W	No	2720.00	<b>2930.00</b>
12.43	Supplying & Fixing of Open Type Heavy Duty Ferromagnetic Copper Ballast for HPSV/HPMH 1A: Supply of High Intensity Discharge Electro Magnetic Ballast suitable for ... W sodium vapour / Metal Halide lamp with Copper winding of Orthocyclic winding coil. Class H insulated dual coated copper wire. Compliance to IEC 61347-2-9 Safety & IEC60923- Performance. Winding Temperature for HID Ballast $t_w = 130$ deg C & temperature rise $\Delta T = 70$ deg C. Operating voltage range from 180V to 265V, 50Hz AC power Supply.			
12.43.1	For 70 -W	No	1367.00	<b>1480.00</b>
12.43.2	For 150 -W	No	1889.00	<b>2062.00</b>
12.43.3	For 250 -W	No	2493.00	<b>2720.00</b>
12.43.4	For 400 -W	No	3876.00	<b>4228.00</b>
12.44	Supplying & Fixing of 230 V 20/40 W starter for Fluorescent Lamp	No	23.00	<b>26.00</b>
12.45	Supplying & Fixing of 230 V 20/40 W Fluorescent Lamp holder	No	15.00	<b>17.00</b>
12.46	Supplying & Fixing of 70-150 W lamp holder 2 Pin	No	106.00	<b>118.00</b>
12.47	Supplying & Fixing of 70-150 W lamp holder 4 Pin	No	62.00	<b>69.00</b>
12.48	Supplying & Fixing of 230 V Porcelain holder for MV/SV/ MH Lamp	No	106.00	<b>118.00</b>
12.49	Supplying & Fixing of 250-400 W lamp Holder	No	173.00	<b>190.00</b>
12.50	Supplying & Fixing of Ignitor Suitable for 70 to 400 W SV/MH fittings. Operating voltage range from 180V to 265V, 50Hz AC power Supply.	No	575.00	<b>630.00</b>
12.51	Supplying & fixing LED Drivers suitable for 5700K LED fitting Indoor Fixtures. Operating voltage range from 180V to 265V, 50Hz AC power Supply			
12.51.1	upto 3W 5700K suitable for indoor LED fitting.	Each	210.00	<b>225.00</b>
12.51.2	5W to 6W 5700K suitable for indoor LED fitting.	Each	246.00	<b>275.00</b>
12.51.3	9W to 12W 5700K suitable for indoor LED fitting.	Each	286.00	<b>315.00</b>
12.51.4	15W to 18W 5700K suitable for indoor LED fitting.	Each	583.00	<b>640.00</b>
12.51.5	25W 5700K suitable for indoor LED fitting.	Each	1445.00	<b>1570.00</b>
12.51.6	28W 5700K suitable for indoor LED fitting.	Each	1473.00	<b>1585.00</b>
12.51.7	36W 5700K suitable for indoor LED fitting.	Each	1550.00	<b>1682.00</b>
12.51.8	43W 5700K suitable for indoor LED fitting.	Each	1658.00	<b>1794.00</b>
12.52	Supplying & fixing LED Drivers suitable for 5700K LED fitting Outdoor Fixtures. Operating voltage range from 180V to 265V, 50Hz AC power Supply			
12.52.1	25W 5700K suitable for outdoor LED fitting.	Each	1198.00	<b>1310.00</b>
12.52.2	40W 5700K suitable for outdoor LED fitting.	Each	1700.00	<b>1840.00</b>
12.52.3	70W 5700K suitable for outdoor LED fitting.	Each	2872.00	<b>3125.00</b>
12.52.4	90W 5700K suitable for outdoor LED fitting.	Each	3345.00	<b>3650.00</b>
12.52.5	120W 5700K suitable for outdoor LED fitting.	Each	4260.00	<b>4640.00</b>
12.52.6	150W 5700K suitable for outdoor LED fitting.	Each	5820.00	<b>6340.00</b>
12.52.7	180W 5700K suitable for outdoor LED fitting.	Each	6422.00	<b>6990.00</b>
12.52.8	200W 5700K suitable for outdoor LED fitting.	Each	8065.00	<b>8800.00</b>
12.52.9	240W 5700K suitable for outdoor LED fitting.	Each	8757.00	<b>9540.00</b>

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12.53	Supplying and fixing of round or oblong type bulk head fitting glass cover	No	61.00	<b>68.00</b>
12.54	Supply, installation, testing & commissioning of Occupancy Sensor Switch:-Surface Mount with movement detector with built-in switch. It will switch off the lights in a room or area when it is vacated and thus save upto 30% of electrical energy The Occuswitch Surface Mount can switch any load upto 6A, Device mounting heights between 2.5 and 3.5 meter, for movement detection covering an area of 4 to 5 square meters (desk work) and 6 to 8 meters for larger movements like walking (at 25 deg Cel ambient). "Functions- Automatic control of lights/electrical load switch ON/OFF automatically when any movement is detected, with adjustable time settings for Switch ON/OFF( 30 seconds to 30 minutes ). Red LED indicator on detection of movement." Smart timer- The smart timer will extend the delay time by the set delay time if movement is detected shortly after switch off, assuming that the area is still in use, but very little movement is made. "Power Supply-Voltage 230 V +/-1 0%,. 50/60Hz AC Supply,.. Maximum load 6 A. (1440 VA) any load, .. Maximum wire range 0.75 to 1.5mm2, .. Mains distribution system TN-S with Neutral grounded,.."	Each	2800.00	<b>3020.00</b>
12.55	Supply, installation, testing & commissioning of Daylight Occupancy Sensor Switch:- Surface Mount with movement detector & daylight sensing with built-in switch. It will switch off the lights in a room or area when it is vacated or day light is sufficient enough and thus save upto 30% of electrical energy The Occupancy switch Surface Mount can switch any load upto 6A, Daylight override- Prevent Automatic switch-ON when sufficient daylight is available in order to create additional power savings To enable this feature necessary settings are available on the device for adjusting required light level. Device mounting heights between 2.5 and 3.5 meter, for movement detection covering an area of 4 to 5 square meters (desk work) and 6 to 8 meters for larger movements like walking (at 25 deg Cel ambient). "Functions- Automatic control of lights/electrical load switch ON/OFF automatically when any movement is detected, with adjustable time settings for Switch ON/OFF( 30 seconds to 30 minutes ). Red LED indicator on detection of movement." Smart timer- The smart timer will extend the delay time by the set delay time if movement is detected shortly after switch off, assuming that the area is still in use, but very little movement is made. "Power Supply-Voltage 230 V +/-10%,. 50/60Hz AC Supply, .. Maximum load 6 A (1440 VA) any load. Maximum wire range 0.75 to 1.5mm2, ..Mains distribution system TN-S with Neutral grounded,.."	Each	3400.00	<b>3400.00</b>
<b>Chapter - 13</b>				
<b>FIXING CHARGES</b>				
13.0	<b>FIXING CHARGES</b>			

			SR 2019-20	SR 2022-23
13.1	Supplying and Fixing of.....mm dia class A GI pipe bracket upto 2 ms long bent at suitable angle and fixing to this bracket 1x40/2x40 W fluorescent tube street light fitting of all capacities to GI or GI or rail or RCC pole / wall using suitable cIA, bolts, and nuts and wiring using suitable capacity wires.			
13.1.1	Using 25mm dia G.I.Pipe	Each	775.00	<b>837.00</b>
13.1.2	Using 32mm dia G.I.Pipe	Each	835.00	<b>902.00</b>
13.2	Supplying and Fixing.....mm dia class A GI pipe bracket upto 2.7 meters long terminated with a reducing collar of 40x25mm to which extra pipe of 175mm length is fixed for fixing MV/SV/MH/FTL street light fitting of all capacities on rail/RCC/wall/tubular pole, using suitable cIA, bolts, nuts and wiring using suitable capacity wires.			
13.2.1	Using 25mm dia G.I.Pipe	Each	972.00	<b>1050.00</b>
13.2.2	Using 32mm dia G.I.Pipe	Each	1052.00	<b>1136.00</b>
13.2.3	Using 40mm dia G.I.Pipe	Each	1212.00	<b>1309.00</b>
13.3	Supplying and Fixing 50mm class A GI pipe up to 4.5 ms. long with a reducing collar of 50x40mm to which, an extension of 250 mm pipe is fixed for 125 or 250/400 W MV/Sodium vapour street light fitting, using suitable cIA, bolts ,nuts, and wiring using suitable capacity wires.	Each	2035.00	<b>2198.00</b>
13.4	Supplying and fixing telescopic M.S. bracket fabricated by using 0.5m length 4" dia telescopic M. S. pipe, with 2" dia 1.5m long M.S.Bracket and are welded with suitable angle, using 6mm thick M. S. sheet, grip bolts & nuts, as required, suitable for 9 to 12 ms. M. S. tubular pole, with necessary two coats of painting, with all other accessories.			
13.4.1	Single bracket 1.5 m. Length	Each	1200.00	<b>1296.00</b>
13.4.2	Single bracket 2 m. Length	Each	1557.00	<b>1682.00</b>
13.4.3	Double bracket 2x1.5 m. Length	Each	1962.00	<b>2119.00</b>
13.4.4	Double bracket 2x2 m. Length	Each	2302.00	<b>2486.00</b>
13.5	Fixing halogen/metal halide /SVL/IL/LED floodlight fitting over existing pole / wall ceiling including cIA, bolts, nuts and wiring using suitable capacity wires.	Each	175.00	<b>189.00</b>
13.6	Fixing charges of post top/ Gate/ Garden fitting /LED on the existing CI/ GI or any other pipe using required size of reducer, wiring using suitable wires.	Each	154.00	<b>166.00</b>
13.7	Fixing all types and all capacities of fluorescent /false ceiling / spot light / CFL / LED fittings indoor on the wall/ ceiling / rafters / girders using 23/0.0076" twin twisted PVC insulated wires, required Nos of round blocks and cIA.			
13.7.1	On wall/ ceiling / Rafter / Girders	Each	110.00	<b>119.00</b>
13.7.2	Using necessary length of G.I. chain	Each	234.00	<b>253.00</b>
13.8	Using 1 m long 19mm 18 SWG enamelled braised conduit of two nos. rod pendent with ball socket with check nuts all nickel plated	Each	281.00	<b>303.00</b>
13.9	Using 2 m long 19mm 18 SWG enamelled braised conduit of two nos. rod pendent with ball socket with check nuts all nickel plated	Each	492.00	<b>531.00</b>

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13.10	Fixing a ceiling / Wall mounting fan of all capacities and all types to the existing 'S' hook with fan regulator to the existing board together with supplying and fixing 5 A. ceiling rose, necessary length of 23 / 0.0076 inch PVC insulated twin twisted copper wire and wiring.	Each	150.00	<b>162.00</b>
13.11	Fixing a ceiling /wall mounting fan of all capacities and all types, with necessary cIA and 'S' hook made out of 15mm dia MS rod, with 5 A. ceiling rose of approved quality with necessary length of 23/0.0076 inch PVC insulated twin twisted wire of approved quality, mounted on a suitable size wooden board and wired.	Each	260.00	<b>281.00</b>
13.12	Extra length of GI pipe of class B 19mm dia for down rod.	m	160.00	<b>173.00</b>
13.13	Fixing one exhaust fan after making a suitable notch in the wall and finishing with cement mortar and colouring to match the existing wall or brackets, with bolts and nuts and a 5 A, ceiling rose with sufficient length of 23 / 0.0076 inch PVC insulated twin core wire of approved make with wire mesh and wooden frame.	Each	650.00	<b>702.00</b>
13.14	Fixing one exhaust fan in the nitch already left in the wall with bolts and nuts and 5 A. ceiling rose with sufficient length of 23/0.0076 inch PVC insulated twin core wire.	Each	400.00	<b>432.00</b>
13.15	Erection charges for fixing a ... litres capacity wall mounting electric geysers using bolts, flat at one end nut and washers at the other end for through bolts and nuts and washers with 150x450x600mm back plate and wiring complete with 15A 3 pin top.			
13.15.1	upto 30 Litres	Each	600.00	<b>648.00</b>
13.15.2	35 to 50 Litres	Each	650.00	<b>702.00</b>
13.15.3	70 to 100 Litres	Each	700.00	<b>756.00</b>
13.16	Erection of single phase preventer / ammeters / including fixing selector switch / voltmeter / current operated earth leakage circuit breakers / voltage operated circuit breaker / above 100A fuse channel set (3 Nos) HRC fuses above 100A (3 Nos.) / Digital ammeter/digital volt meter/set of 3 indicating IA /MCB / Relays /A-V selector switches including wiring using suitable capacity wires, bolts, nuts, screws.	Each	150.00	<b>162.00</b>
13.17	Fixing a shunt capacitor of ... kVAR capacity with necessary cIA, bolts, and nuts on existing wooden or metal board including banking of more than one capacitor.			
13.17.1	upto 5 kVAR	Each	210.00	<b>227.00</b>
13.17.2	6 to 10 kVAR	Each	250.00	<b>270.00</b>
13.17.3	11 to 20kVAR	Each	310.00	<b>335.00</b>
13.18	Fixing of ..... A TPST / change over switch / Contactor along with neutral link with screws, bolts, nuts and wiring using required capacity wires and circuit labelling.			
13.18.1	15A to 63A TPST	Each	240.00	<b>259.00</b>
13.18.2	100A to 250A TPST	Each	380.00	<b>410.00</b>
13.18.3	300A to 400A TPST	Each	500.00	<b>540.00</b>
13.18.4	15A to 63A TPDT/COS	Each	250.00	<b>270.00</b>
13.18.5	100A to 250A TPDT/COS	Each	410.00	<b>443.00</b>
13.18.6	300A to 400A TPDT/COS	Each	515.00	<b>556.00</b>

			SR 2019-20	SR 2022-23
13.19	Fixing all types and all capacities of 1'x4' / 2'x2' LED Light fittings indoor on the wall / ceiling / rafters / girders with necessary supporting frame, using 2310.0076" twin twisted PVC insulated wires, required Nos of round blocks and c/A.	Each	450.00	<b>486.00</b>