

NAME OF WORK : Strengthening Work Of Electrical Installation Work in Mental Hospital Building at Jamnagar.								
:: ABSTRACT SHEET ::								
SOR 2026-27								
Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
1		Point wiring for Light / Bell with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder/ceiling rose / H.D.Connector as directed. (a) with medium class Rigid PVC pipe and accessories erected flushed on wall/ceiling complete Cat. III	Pt	75.00	534.00	5.34	539.34	40450.50
2		Point wiring for FAN with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of .ISI marked 1.1 KV Grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected with 6A Modular type switch and hum free EME step type electronic fan regulator mounted and accessories with earth continuity of following type erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected. with necessary ceiling rose / H.D.Connector as directed.(a) with medium class Rigid PVC pipe and accessories erected flushed on wall/ceiling complete Cat. III	Pt	25.00	758.00	7.58	765.58	19139.50
3		Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [I] For 6A Plug and 6 a switch with 2-1.5 sq.mm Cu. Wire from nearby switchboard/mcb db board (a) with medium class Rigid PVC pipe and accessories erected flushed on wall/ceiling complete Cat. III	Pt	10.00	565.00	5.65	570.65	5706.50
4		Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [II] For 16A Plug and 16 amp switch with 2-2.5 sq.mm Cu. Wire from mcb db board. (a) with medium class Rigid PVC pipe and accessories erected flushed on wall/ceiling complete Cat. III	Pt	10.00	845.00	8.45	853.45	8534.50
5		Point wiring for on board Looped Plug with 6A Modular type switch & 5 pin socket erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured / metallic/white front plate modules erected on / in wall / ceiling with following type accessories Cat. III	Pt	20.00	306.00	3.06	309.06	6181.20

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
6		Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed <b>(b) 25 mm</b>	Mtr	150.00	33.00	0.33	33.33	4999.50
7		Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories <b>(a) 2 wire 1.5 sq. mm</b>	Mtr	180.00	78.00	0.78	78.78	14180.40
8		Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories <b>(b) 2 wire 2.5 sq. mm</b>	Mtr	520.00	103.00	1.03	104.03	54095.60
9		providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) with medium class Rigid PVC pipe and accessories <b>(a) 2 wire 4 sq. mm</b>	Mtr	90.00	139.00	1.39	140.39	12635.10
10		Providing & erecting Switch board for Computer or electric apparatus consisting of following modular type accessories mounted with PVC / Metallic concealed/open box with single mounting base frame covered with textured/metallic /white front plate,modules erected with necessary connections as directed 1 no. 6A/16A universal plug-switch combined. 3 nos. 6A Switch 3 nos. 6A 5 pin Plug For Modular Type Accessories Cat. III	Ea	10.00	1122.00	11.22	1133.22	11332.20
11		Supplying & erecting Electronic Type Cordless Call Bell erected on PVC/Metal board having portable bell push working on D.C. & bell on 230V A.C. supply with cells / battery	Ea	2.00	248.00	2.48	250.48	500.96
12		Providing & erecting Approved make Power Saving 50 Watt Ceiling Fan with double ball bearing ISI mark with Condenser 230 volt A.C. 50 Hz 1200 mm sweep complete having 3blades with aluminium blades with , canopy & 30 cm. down rod erected with earthing.(Make shall be approved by Engineer in charge))	Ea	50.00	1929.00	19.29	1948.29	97414.50
13		Supplying and erecting 19 / 20 mm. nominal bore Medium Class M.S. Pipe down rod erected duly painted for fan complete with proper insulation without leakage and earthing.	Mtr	100.00	107.00	1.07	108.07	10807.00
14		Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (A) single phase incoming and horizontal single phase outgoing (b) sheet steel double door (IP-43) (iv)12 way	Ea	5.00	1478.00	14.78	1492.78	7463.90

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15		Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for <b>(B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (iii)8 way</b>	Ea	2.00	3379.00	33.79	3412.79	6825.58
16		providing and erecting Miniature circuit breaker single pole 6A to 25A suitable to operate on 240 V A.C. system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark Cat.III	Ea	93.00	122.00	1.22	123.22	11459.46
17		Providing & erecting 240 V MCB double pole switch for lighting Load (B Curve) having 10 KA breaking capacity & confirms to IS : 8828 in existing box having following capacity (B) 40 Amp. Cat III	Ea	16.00	322.00	3.22	325.22	5203.52
18	3-11-4.	Sheets steel powder coated enclosure suitable for incorporating One/Two nos. MCB.	Ea	5.00	175.00	1.75	176.75	883.75
19		Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity <b>(c)63 Amp. Cat.III</b>	Ea	6.00	803.00	8.03	811.03	4866.18
20		providing and erecting Approved make RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 10 KA and suitable for operation on single phase 240 V,50Hz. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component. for following Max. rating erected as directed <b>(ii) 40Amps. DP Cat.III</b>	Ea	11.00	2434.00	24.34	2458.34	27041.74
21		Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables. <b>(B) 2 core 6 Sq. mm</b>	Mtr	700.00	111.00	1.11	112.11	78477.00
22		Providing and erecting XLPE (IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables <b>(A) 4 core 16 Sq. mm</b>	Mtr	250.00	183.00	1.83	184.83	46207.50
23		Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables <b>(D) 3 1/2 core 70 Sq. mm ( 35 Sq. mm 1/2 core)</b>	Mtr	80.00	450.00	4.50	454.50	36360.00
24		Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. <b>(C) 16 Sq.mm.</b>	Ea	18.00	15.00	0.15	15.15	272.70
25		<b>(E) 70 Sq.mm.</b>	Ea	8.00	25.00	0.25	25.25	202.00
26		Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables. <b>(D) 2 to 4 core 16 Sq. mm</b>	Ea	4.00	47.00	0.47	47.47	189.88

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
27		Providing and, fixing heavy duty flange type brass double compression type cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables. <b>(C) 3 &amp; 1/2 core 70 Sq. mm</b>	Ea	2.00	102.00	1.02	103.02	206.04
28		Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/ aluminium die cast powder coated and high U.V. & corrosion resistance with diffuser with company mark/name 160V to 270V, Power Factor more than 0.95, THD < 15%, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt, LED driver efficiency > 85 % ( fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) <b>(A) Tube Light with integral driver (iv) 22-24 Watts, Surge - 2KV, IP-20, conventional 4 feet</b>	Ea	130.00	370.00	3.70	373.70	48581.00
29		Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V, Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K, Uniformity ratio > 0.45, Luminaire efficacy > 100 lumens/watt. LED driver efficiency > 85 %.( fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) <b>(A) Street Light (IP-65), Surge protection -4KV integral and ,Light must have 440VAC line supply with over-voltage protection. (iii) Above 60 to 89 watts</b>	Ea	5.00	5030.00	50.30	5080.30	25401.50
30		<b>(B) Flood Light (IP-65), Surge protection -4KV integral and ,Light must have 440VAC line supply with over-voltage protection. (iii) Above 60 to 89 watts Cat-III</b>	Ea	6.00	5124.00	51.24	5175.24	31051.44
31		Providing and erecting street light pole bracket comprising main B Class <b>MS pipe</b> of 4.2 cm/require outside dia. complete with suitable B Class M.S. sleeve tubing of approx. 45cms.length and suitable for 76.5 mm / 80mm. / require size pole top having sufficient fasteners for fixing the brackets and having spread of 1 mtr. length with suitable rise as per site condition & suitable welded stiffener reducer and nipple with check nut complete painted with one coat of Red oxide / PU base primer and two coats of Aluminium / PU paint. paint with following nos of arms. <b>[A] Single Arm bracket 1 Mtr</b>	Ea	5.00	556.00	5.56	561.56	2807.80

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
32		Supplying & erecting approved make SMC press moulded composite FRP. loop-in, loop-out approx. 2mm thick box complete with Bakelite connector strip 5way(3P+N+E),DIN rail for mounting mob & hinged doors as per requirement having locking arrangements with mounting clamp with nuts, bolts & washers suitable for erection on pole with cable clamps& earth bolt of following size of box. <b>(C)150mm x 125mm x 100mm [deep]</b>	Ea	5.00	472.00	4.72	476.72	2383.60
33		Providing & erecting weather proof, dust & vermin proof, floor mounted front operated indoor type cubical panel board necessary IP-42 and above protection as per approval from engineer incharge made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary accesories , supporting angles/ flats channel including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of supplied switch gears, BUSBARS, suitable size of inter connecting PVC copper wire / copper-aluminium strips, rubber grommets, rib, bakelite control fuses/MCB for measuring instruments, earth bus & earth bolts, foundation flange - bolts-base Plates, sufficient nos. of hinged doors, handles with locking arrangement and rubber gasket,heavy duty end terminal connection,danger notice board,necessary ventilation,earthing strip complete. The Panel shall be painted with epoxy powder coating.						
		(The rates excludes the cost of switchgears, bus bars, inter connecting mains & Copper Aluminium strips, meters, Fuses etc. The dimension shall be measured excluding base beams) The panel shall be supplied with following approved manufacturers with following size. (A) locally fabricated panel board (i) with 350 mm depth	Smt	4.30	10365.00	103.65	10468.65	45015.20
34		Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 35 KA. at 415 V. having normal current rating 125A. with Fixed thermal & magnetic release suitable to work on A.C.supply 50 c/s. with all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	Ea	5.00	8774.00	87.74	8861.74	44308.70
35		Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 35 KA. and above at 415 V . having normal current rating 250A. with variable thermal & magnetic release suitable to work on A.C.supply 50 c/s. with all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	Ea	1.00	22813.00	228.13	23041.13	23041.13

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
36		Supplying and erecting triple pole & neutral 440V / 500V panel mounting Copper Busbars with four equal Nos. of electrolyte bus having current density not more than 1.6 Amp. / sq.mm (Rated current / cross section area) duly wrapped with colour insulating tape for phase sequence of following current carrying capacity, erected with necessary bus bar supports /insulators, main cable socket to each bar, erected in existing cubical panel with necessary connections.(C) Suitable for 300 Amp. capacity	Rm.mtr	1.50	4861.00	48.61	4909.61	7364.42
37		Supplying and erecting approved make panel mounting type Digital Voltmeter having 3 digits LED display, 0 to 750 AC Volts range erected on existing panel board with all connection, wiring etc .with manufacturers calibration certificate.	Ea	1.00	1263.00	12.63	1275.63	1275.63
38		Supplying and erecting approved make panel mounting type Digital Ammeter having 3 digits LED display, external CT operated, calibrated for 0 to 1000 Amps suitable to operate on 500 Volt AC , erected on existing panel board with all connection, wiring etc .with manufacturers calibration certificate.	Ea	1.00	1543.00	15.43	1558.43	1558.43
39		Supplying and erecting approved make suitable panel indicator LED type lamp, lens cover, complete erected with necessary connections.	Ea	3.00	43.00	0.43	43.43	130.29
40		Supplying and erecting Ammeter / Voltmeter selector switch for 3 phase AC Supply 500 V on existing panel board with necessary connections.	Ea	1.00	314.00	3.14	317.14	317.14
41		providing and erecting Mains with ISI marked, 1.5KV grade electrolyte multi stranded, annealed copper conductor with heat resistant PVC insulated conforms to IS 694, IEC - 227 erected in existing pipe of following size (Specifically for control panel, relays, power switchgears, motor starters & control wiring) with required size of copper lugs, nuts and bolts if required.(g) One wire 16.00 sq. mm	Mtr	60.00	176.00	1.76	177.76	10665.60
42		(h) One wire 25.00 sq. mm	Mtr	20.00	293.00	2.93	295.93	5918.60
43		(i) One wire 35.00 sq. mm	Mtr	17.00	373.00	3.73	376.73	6404.41
44		Providing , erecting , fabricating the M.S. structure as per requirement on site incorporating proper size of M.S. angles,square,round, flats, bars, channels, sections complete with cutting, welding, grinding & finishing duly painted with one coat of red oxide with erection on site as per direction of engineer in charge with necessary grouting, cementing, plastering & finishing complete.	Kg.	40.00	77.00	0.77	77.77	3110.80

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45		Supplying & erecting earth pit of minimum bore dia.150mm size approved make Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 50mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover. (A)(approved make OEM has to submit test certificate including value of earth resistance of installation duly stamped and signed by agency and officer Incharge has to ensure the value of earthing resistance mentioned in test Certificate) & having back filling compound of (B) Inner chemical (CCM Compound)- Resistivity:- 0.2 ohm / meter testing as per IEC 62561-2017, Voltage drop:- < 1 volt at no load & dry form, Sulphur content:- <2%(C) Back fill Compound :- Earthing compound should be capable to retain moisture for long time Necessary test report must be submitted by Agency. <b>(b)For Electrical installation up to 11 KV in normal soil.</b> <b>Length of Pipe : 2.00 mtrs</b> <b>Back filling Compound :1 no. Bag of 25 Kg..</b>	Ea	5.00	5703.00	57.03	5760.03	28800.15
46		Supplying and erecting approved make oscillating type medium duty bracket fan with Aluminium Blades A.C. 230V. 50cy/s, with thermal overload protection wall mounted with height adjustment and rotary tilting device complete with guard, pull cord for speed and oscillation flexible Core plug top complete erected with lead wires as directed. (a) 450mm	Ea	5.00	3484.00	34.84	3518.84	17594.20
47		Providing & erecting open well horizontal mono block pump set with cast iron body, complete for three phase submersible motor having [D] For 5 HP 3 phase open well horizontal mono block pump set suitable for 1350 LPM to 310 LPM @ 10 to 42 Mtr head suitable for 50/65 mm dia delivery pipe Cat.II	Ea.	1.00	20417.00	204.17	20621.17	20621.17
48		Supplying and erecting Direct-on-line, Starter with 15A.rating contractor and with 4-14A. range, directly operated thermal overload relay in sheet steel enclosure for 3phase 415V.50 c/s. A.C. motor up to 7.5 H.P.complete erected on P.W. Block with necessary connection. Cat-III	Ea.	1.00	2026.00	20.26	2046.26	2046.26
49		Providing and erecting ISI marked PVC insulated PVC Sheathed Flat flexible Submersible copper cable approved make of following Size. (C) 3 Core x 4 Sq. mm	Mtr	50.00	145.00	1.45	146.45	7322.50

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
		<p>Supply, Installation, Testing and Commissioning (SITC) of Silent Type Diesel Generating (DG) Set(s) of prime power rating (kVA) as specified, complete as a packaged system, conforming to CPCB IV+ (or better) emission norms, and complying with all applicable statutory requirements, codes and standards including (but not limited to) IS 4722:1968, IS 13364 (Part 2) and BS 5514 (latest editions/amendments). The DG set shall be suitable for 415 V <math>\pm</math>10%, 50 Hz <math>\pm</math>5%, 3-phase, 4-wire operation at 0.8 lagging power factor, 1500 RPM, for tropical conditions, and shall be capable of delivering 10% overload for one (1) hour after twelve (12) hours of continuous operation (ISO 8528), unless otherwise stated by the OEM. The scope shall include complete accessories, interconnections, foundations/anti-vibration arrangements, exhaust system, acoustic enclosure, earthing (as required), consumables for first commissioning, and all works necessary to render the installation fully functional and compliant, as directed by the Engineer-in-Charge (EIC). Factory testing shall be carried out with fuel and load bank at 0.8 power factor and the DG set shall be offered for inspection prior to dispatch. The DG set shall be provided with a durable QR code/label fixed on the enclosure/control panel, linking to a document repository containing (as a minimum) approved GA drawings, wiring diagrams, foundation and installation details, OEM catalogues, operating &amp; maintenance manuals, factory test reports, type test certificates (where applicable), warranty certificate, geo-tag of manufacturing location, and rating plate data as per relevant IS/BS/ISO requirements. The OEM/Contractor shall provide a Remote Monitoring System (RMS) with minimum one (1) year connectivity (SIM/data plan/server access as applicable), including dashboard access, user ID/password, and data download facility. RMS shall, at minimum, capture and report: DG status (Auto/Manual/Off), start/stop events, kW/kVA/kVAR, V/I/Hz, PF, run hours, fuel level, battery voltage, alarms/trips with time stamp, and GPS/location (where supported). All licences/subscriptions required for the stated period shall be included in the quoted price.</p> <p>(A) Diesel Engine:  Turbocharged, 4-stroke, water-cooled, multi-cylinder diesel engine, suitably rated for the specified DG set prime rating at site conditions, complete with dynamically balanced flywheel, heavy-duty engine mounting, and electric starting arrangement. The engine governing shall be electronic (isochronous/droop as per OEM standard) and shall comply with ISO 8528/BS 5514 requirements for steady-state speed regulation. Engine shall be complete with dry type air cleaner with restriction indicator, lube oil cooler (if required), radiator/cooling package (as applicable), and all sensors/switches required for protections and annunciation. The engine shall be capable of 10% overload for one (1) hour after twelve (12) hours continuous operation and shall be suitable for continuous duty under tropical ambient conditions. The offered engine model shall be CPCB IV+ compliant and shall be supplied with complete emission control/after-treatment system (including DEF/urea dosing where applicable) along with all accessories, tanks, pumps, heaters and controls required for compliant operation. The supply shall include first fill of lubricating oil, coolant and consumables required for initial commissioning and testing. All fasteners, couplings, guards, hoses and standard/recommended accessories required for safe and reliable operation shall be included and shall be subject to inspection/approval by the EIC.</p> <p>(B) Engine-Mounted Instrumentation/Control Panel:  Engine-mounted instrument/control panel shall be microprocessor based, with LCD/LED display, event log and alarm/trip annunciation, complete with all wiring, harnesses and terminations. Indications/protections shall include (minimum) the following and any additional protections recommended by the OEM: (i)</p>						



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		<p>Start/Stop key switch and/or push buttons with emergency stop; (ii) Output breaker: suitably rated 4-pole ACB/MCCB/MCB as applicable, with minimum 25 kA rupturing capacity (or as per fault level at site, whichever is higher), with shunt trip where required; (iii) Jacket water/coolant temperature – indication and high temperature alarm/trip; (iv) Lube oil pressure – indication and low pressure alarm/trip; (v) Lube oil temperature (where provided) – indication/alarm; (vi) Battery charging indication, battery voltage indication and charging failure alarm; (vii) Engine speed (RPM) indication and overspeed trip; (viii) Engine running hours meter (non-resettable); (ix) Fuel level indication and low fuel alarm; (x) Fail-to-start / crank fail alarm; (xi) Under/over frequency and under/over voltage protection (alternator side) as applicable; (xii) Common alarm and common trip indication with potential-free contacts for BMS/remote annunciation. All meters/indications shall be of proven industrial quality and the panel shall be wired, ferruled and labelled. The contractor shall submit wiring diagrams, protection settings and datasheets for approval prior to dispatch/installation.</p> <p>(C) Alternator: Synchronous, brushless alternator of appropriate kVA rating, 415 V, 3-phase, 50 Hz, 1500 RPM, 0.8 lagging PF, continuous duty, dynamically balanced rotor, self-cooled, self-excited and AVR regulated. Enclosure shall be SPDP, minimum IP23. Insulation shall be Class H with suitable tropicalization; temperature rise shall be within limits of the applicable standard. The alternator shall comply with IS 13364 (Part 2), IS 4722 and/or BS 2613 (latest), as applicable. Voltage regulation with AVR shall be within ±1.0% (steady state) or OEM standard whichever is better. The alternator shall be capable of 10% overload for one (1) hour after twelve (12) hours of continuous operation. Harmonic distortion shall be suitable for non-linear loads; alternator shall be equipped with appropriate AVR features (e.g., soft start, UFRO) and shall be suitable for motor starting duties typical to the installation. Terminals shall be brought out to a terminal box with adequate space for termination and shall include earthing terminals. All routine/type test certificates (as applicable) shall be submitted for acceptance.</p> <p>(D) Base Frame &amp; Foundation: Engine and alternator shall be mounted on a suitably designed, fabricated MS channel base frame with stiffeners, lifting arrangement and coupling guard, duly painted/treated for corrosion protection. The set shall be installed on an adequately designed cement concrete foundation/pedestal with anchor bolts, pockets, grouting and anti-vibration mounts (AVMs) / spring isolators as per OEM recommendations and site conditions. Vibration levels shall be within OEM permissible limits. The contractor shall be responsible for alignment, levelling, tightening torque and re-check after load trial, complete in all respects.</p> <p>(E) Fuel Tank: In-built/base fuel tank fabricated from minimum 3 mm thick MS sheet, duly leak-tested, complete with filling arrangement, vent, drain, cleaning opening, level indication and isolation valve(s). The capacity shall be adequate for minimum eight (8) hours continuous operation at full load. Fuel piping between tank and engine shall be MS 'C' class pipes of suitable diameter with compatible flexible connections (where required), complete with all valves, clamps, supports, unions and fittings. Any additional safety provisions required by local fire authority/UGVCL/competent authority (such as double wall/bunding, flame arrestor, etc.) shall be provided within the quoted scope.</p> <p>(F) Exhaust System: Heavy-duty residential type exhaust silencer suitable for CPCB IV+ installation (with DEF/after-treatment system wherever applicable) along with exhaust piping of required length, bends, supports and flexible bellow, complete with rain cap, drain</p>						

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		<p>arrangement and all accessories. Exhaust piping shall be thermally insulated/lagged and cladded where required to ensure personnel safety and to limit heat radiation inside the DG room/enclosure. The complete exhaust arrangement shall be designed such that engine exhaust back pressure remains within OEM permissible limits and shall comply with applicable statutory and safety requirements.</p> <p>(G) Starting System: 12 V / 24 V DC electric starting system (as per OEM design) comprising starter motor(s), battery charger/alternator charging arrangement, relays, cabling and terminals, complete with maintenance-free batteries of suitable Ah capacity to ensure minimum three (3) consecutive cranking attempts. System shall include battery isolator and indication of charging healthy/failure. All battery interconnections shall be with crimped lugs, insulated sleeves and proper supports, complete in all respects.</p> <p>(H) Acoustic and Weatherproof Enclosure: Acoustic enclosure shall be factory-fabricated, weatherproof and corrosion protected, suitable for outdoor installation, with minimum IP65 protection (or better) for the enclosure body. Enclosure design shall provide adequate fresh air intake and hot air discharge for engine radiator and alternator cooling such that the internal temperature rise remains within OEM limits at full load. Provision shall be made for safe access/maintenance including lockable doors, viewing window (where provided), emergency stop access, and cable entry glands. Noise level of the complete DG set with enclosure shall not exceed 75 dB(A) measured at 1.0 m distance in free field conditions, in accordance with applicable CPCB requirements. The enclosure shall comply with CPCB IV+ (or better) requirements and other applicable local rules/regulations. All louvers, acoustic infill/insulation, fasteners and sealing arrangements shall be of fire-retardant/industrial grade as per OEM standard. Any deviation from the specified noise/IP requirements shall be treated as non-compliance unless explicitly approved by the EIC in writing.</p> <p>Erection, testing, commissioning and satisfactory performance demonstration shall be carried out as per site requirements and as directed by the Engineer-in-Charge. The scope shall include pre-commissioning checks, insulation resistance tests, no-load and load trials, safety/protection checks, and performance test on load bank (where directed) with submission of test records. The contractor shall provide initial consumables including first fill of diesel fuel (minimum up to 80% of fuel tank capacity), lubricating oil, coolant, etc. required for commissioning and the specified tests. The bidder/OEM shall provide comprehensive warranty/guarantee for the complete DG system (engine, alternator, control panels, RMS, enclosure and all accessories) for a minimum period of two (2) years from the date of commissioning/handling over, whichever is later, covering defects in materials and</p>						

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
		workmanship. During warranty, all spares/repairs/replacements and visits required to maintain the DG set in serviceable condition shall be carried out at no additional cost. All necessary statutory approvals, inspections, testing and certification from the Electrical Inspector/competent authority (including provision, testing and sealing of energy meter(s) wherever applicable) shall be arranged and obtained by the contractor within the quoted scope and time, at no extra cost. Required O&M manuals, as-built drawings, warranty certificates and training to operating staff shall be provided prior to handing over. Note: The DG set specifications shall comply with the latest CPCB guidelines/notifications and all applicable local rules/regulations prevailing as on the last date of tender submission applicable local rules/regulations prevailing as on the last date of tender submission						
50	10-4-2	(F) Continuous Rating of 40 KVA ,BHP not less than 52 BHP	Ea	1.00	634563.00	6345.63	640908.63	640908.63
51	10-4-3	Providing & erecting approved make ATS panel suitable for following size of 3 phase, 415 V., 50 Hz, A.C. diesel generating set complete of scope as detailed below: 1) Power module: Motorised Changeover switch with ATS controller, Auxiliary contactor with NO & NC contacts with Automatic Battery Charger, indicating lamps for Generator ON, Mains ON, Load and suitable control terminals and power terminals with neutral earthing studs. (B) ATS Panel for 40 kVA 3 phase DG Set	Ea	1.00	48306.00	483.06	48789.06	48789.06
Total Amount in Rs.								1537054.36

Nolte:- Dismental Materil of Rs. 13582.00 Will be Decuted From First R.A. Bill OR First and Final Bill.

Asst. Engineer (Ele.)  
P.I.U. Jamnagar

Dy. Executive Engineer (Ele.)  
P.I.U. Jamnagar

Executive Engineer(Ele.)  
P.I.U.Zone I Rajkot.

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
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**Dismantling Material**

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
1		Old & Unservicable material, ALL TYPE/ SIZE OF CABLE, WIRING MAINS etc. with removing charges. The Dismantling material will be the property of contractor	Mtr	300.00	-11.44	0.00	-11.44	-3432.00
2		Old & Unservicable material, Wiring of LIGHT/FAN/BELL/PLUG POINTS WITH PVC PIPE,CABLE,WIRES,SWITCHES ACCESSORIES,HOLDER ETC. AND ALL ACCESSORIES CONNECTECT WITH POINT.with removing charges. The Dismantling material will be the property of contractor.	PTS.	50.00	-27.00	0.00	-27.00	-1350.00

Item No.		Item Description	Unit	Qty	Rate	1 % Labour Cess	Net Rate with Labour Cess	Amount
3		Old & Unservicable material, TUBE LIGHT FITTING (ALL TYPES) WITH LEAD WIRE AND CONNECTIONS with removing charges. The Dismantling material will be the property of contractor	EA.	60.00	-15.00	0.00	-15.00	-900.00
4		Old & Unservicable material, ALL TYPE OF CEILLING FANS/EX. FAN WITH WIRING POINTS. with removing charges. The Dismantling material will be the property of contractor	EA.	20.00	-195.00	0.00	-195.00	-3900.00
5		Old & Unservicable material, ALL TYPE OF Electrical Panel Triple Pole Switch etc. with removing charges. The Dismantling material will be the property of contractor	Job	1.00	-4000.00	0.00	-4000.00	-4000.00
Total Amount of Dismatating								-13582.00

Asst. Engineer (Ele.)  
P.I.U. Jamnagar

Dy. Executive Engineer (Ele.)  
P.I.U. Jamnagar