

SCHEDULE OF WORK (ELECTRICAL)

Name of Work:: Renovation of NABARD premises at Sterling Center 1st and 7th floor, Worli, Mumbai.

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	SH-I (INTERNAL ELECTRICAL INSTALLATION, FAN, FITTINGS, MCB DBs, MCBs, IEI Internal Electrical Installation				
1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
1.1.1	Group C	292	pts	1704.00	497568.00
1.2	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, and earthing the point with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
1.2.1	Group C	319	pts	994.00	317086.00
1.3	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
1.3.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	680	meter	267.00	181560.00
1.4	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor,single core cable in the existing surface recessed steel/ PVC conduit as required.				
1.4.1	6 x 1.5 sq. mm	400	meter	195.00	78000.00
1.4.2	9 x 1.5 sq. mm	120	meter	311.00	37320.00
1.4.3	9 x 4 sq. mm	100	meter	616.00	61600.00
1.5	Wiring for light/ power plug with 2X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 1 Each 4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	2450	meter	373.00	913850.00
1.6	Wiring for light/ power plug with 4X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 2 Each. 4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	950	meter	587.00	557650.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
1.7	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
1.7.1	25 mm	520	meter	168.00	87360.00
1.7.2	32 mm	100	meter	209.00	20900.00
1.8	Supplying of following sizes XLPE insulated. and PVC sheathed Copper conductor armoured power cable of 1.1 KV grade confirming to IS : 7098(Part I) 1988(amended up to date) etc. as required.				
1.8.1	3.5 x 50 sq. mm copper cable	50	meter	5343.00	267150.00
1.8.2	3.5 x 120 sq.mm copper cable	30	meter	13840.00	415200.00
1.8.3	4 x 16 sqmm copper cable	150	meter	1946.00	291900.00
1.9	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface/cable tray as required.				
1.9.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	100	meter	64.00	6400.00
1.9.2	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	30	meter	180.00	5400.00
1.10	Laying of one number PVC insulated and PVC sheathed / XLPE copper conductor armoured power cable of 1.1 KV grade of following size in the existing RCC/HUME/Metal pipe as required.				
1.10.1	Upto 35sqmm	100	meter	47.00	4700.00
1.11	Supplying and making end termination with brass compression and copper lugs for following sizes PVC / XLPE Insulated and PVC sheathed XLPE copper conductor cable of 1.1 KV grade reqd.				
1.11.1	4 X 16 sq. mm (28mm)	32	each	448.00	14336.00
1.11.2	3½ X 50 sq. mm (35mm)	12	each	693.00	8316.00
1.11.3	3.5x120 sq. mm(45mm)	4	each	1290.00	5160.00
1.12	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required	135	each	659.00	88965.00
1.13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required	135	each	545.00	73575.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
1.14	Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	75	each	807.00	60525.00
1.15	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required				
1.15.1	15/16 A switch	185	each	176.00	32560.00
1.15.2	6 Pin 15/16A socket	370	each	219.00	81030.00
1.15.3	6-UTP - 1 Module (RJ-45 Socket outlet)	286	each	710.00	203060.00
1.15.4	USB Charging Socket (20 watt) Type-C	185	each	3206.00	593110.00
1.16	Supplying and fixing following size/modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.				
1.16.1	1 or 2 Module(75mmX75mm)	46	each	354.00	16284.00
1.16.2	3 Module(100mmX75mm)	114	each	384.00	43776.00
1.16.3	8 Module (125mmX125mm)	54	each	517.00	27918.00
1.17	Supplying and fixing of following size of under floor trunking made out of Hot Dip Galvanised Steel sheet having below mentioned compartments including Jointing sleeves, floor fixing supports, chipping and levelling that portion of the floor etc in the floor / in recess etc complete as required.				
1.17.1	100 mm wide (minimum) X 38 mm deep (1 - Compartments)	50	meter	1725.00	86250.00
1.18	Supplying and fixing of following sizes of under floor height adjustable junction boxes with metal cover(Lid) made out of pre-galvnaized sheet steel, including chipping and levelling that portion of the floor etc complete as required.				
1.18.1	150 X 150 X 65 mm - 90 mm deep (Without crossover)	15	each	2833.00	42495.00
1.19	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required	33	each	112.00	3696.00
1.20	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface /recessed conduit/submain wiring / cable as required.	500	meter	50.00	25000.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
1.21	Supplying, installation, testing and commissioning of flip-up type 8-module electrical outlet unit suitable for flush mounting in furniture/table top of thickness 15 mm to 40 mm, comprising 1 no. 15/16A switch conforming to IS 3854:1997, 2 nos. 6A 2P+E sockets 250 V AC 50/60 Hz with safety shutters conforming to IS 1293:2019, USB charging ports (Type-A and Type-C) conforming to IEC 60950-1 and IS 13252 (Part 1): 2010 + A1:2013 + A2:2015, 1 Each RJ45 data outlet Cat-6 conforming to ISO/IEC 11801, and 1 Each HDMI port, having degree of protection IP 30, resistance to impact IK 07, complete with all accessories, wiring, terminations and hardware as required, conforming to relevant IS/IEC standards and as per direction of Engineer-in-Charge.	10	each	19836.00	198360.00
	DB & MCCB				
1.22	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
1.22.1	8 way(4+24), Double Door	18	each	6337.00	114066.00
1.23	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
1.23.1	Single pole	432	each	285.00	123120.00
1.24	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
1.24.1	63A	18	each	3597.00	64746.00
1.25	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required .				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
1.25.1	8 way (4 + 24), Double door	2	each	10724.00	21448.00
1.25.2	12 way (4 + 36), Double door	2	each	13512.00	27024.00
1.26	Supplying, installation, testing & commissioning of indoor floor mounted modular, sectionalized, compartmentalized, extendable type PTTA cubical panel suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply system of suitable size fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plates with stiffness wherever required including cleaning & finishing complete with 7 tank process duly power coated in approved shade conforming to protection class IP42, having suitable Amp capacity extensible type Four Strip Aluminium Alloy bus bars of high conductivity DMC/ SMC bus bar supports,				
	with short circuit withstand capacity of 31 MVA for 1 Sec. bottom base channel of MS section not less than 100mm x 50mm x 5mm thick fabrication shall be done in transportable sections, entire panel shall have a common earth bar of size 25mm x 5mm at the rear with 2 Each, earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with 2.5 sq.mm PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half including providing following switch gears as required. (Drawing shall be got approved from Engineer-incharge before fabrication.)				
	INCOMING				
	630A FP MCCB 36 KA breaking capacity with built-in Thermal magnetic release based MCCB with ROM Spreader link - 1 Each				
	Digital Multi Function Meter with suitable size of 3 Each CT's and back-up MCB Protection - 1 Each				
	3 Each Phase indication LED lamps with 2 Amp back up MCBs, breaker 'ON'/ 'OFF' indicating light - 1 set				
	BUS BARS				
	Four strip aluminium bus bars of minimum of 800 Amps capacity with heat shrinkable coloured sleeves and including DMC/ SMC bus bars supports at required intervals complete for cross section, size support & their spacing etc.				
	OUTGOINGS				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	250A FP, 25 KA breaking capacity, MCCB 415 ±10% volts, 50 Hz, AC 3 phase, 4 wire with built-in Thermal magnetic release based MCCB with ROM Spreader link - 3 Each.	2	each	348924.00	697848.00
1.27	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders/MCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, Ics=100% Icu and Operational Voltage 690V etc. as required.				
1.27.1	250 A,50KA,FPMCCB	4	each	19313.00	77252.00
1.27.2	63A ,TP, 10KA ,C curve MCB	40	each	1759.00	70360.00
1.28	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/ recess, complete with testing and commissioning etc.as required.				
1.28.1	For 8 way, Double door TPN MCBDB	18	each	1448.00	26064.00
1.29	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	250	meter	84.00	21000.00
	TOTAL of 1 (In Rs.)				65,90,988.00
2	LIGHT & FAN FITTINGS				
2.1	SITC of Pendant luminaire Up-Dn with LED (Light Emitting Diode) system power not exceeding 36W, with Luminous flux of luminaire minimum 4300 lm, Colour temperature of 4000 K, CRI>80, 230 V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, Energy-efficient LEDs, Direct - Indirect light emission, Luminaire profile in aluminium with Polyester powder white coloured coat, snap-fit Prismatic diffuser for UGR< 19, for homogenous light distribution for down side and special lens with wide beam on Each LED for upside for even light distribution , internal wiring of fitting shall be with FRLS wire, Electronic control gear. Sliding fixing wire suspension,R9>0.Protection class I, minimum IP-20 rating,SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf>0.95. (Minimum length of fitting 1150 mm) etc. complete as required at site.	71	each	5817	413007.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
2.2	SITC of Decorative Pendant luminaire Up-Dn with LED, system power not exceeding 36W, luminous flux of luminaire minimum 4200 lm, colour temperature of 4000K, CRI>80, 230V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, direct - indirect light emission, extruded aluminium housing with Polyester powder white coloured coat, Prismatic diffuser for glare free illumination, internal wiring of fitting shall be with FRLS wire,external Electronic control gear, R9>0. Protection Class I, minimum IP-20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf >0.95.(Minimum length of fitting 1150 mm) etc. complete as required at site.	16	each	14615	233840.00
2.3	SITC of Decorative Pendant luminaire with HPE (High-Performance Efficiency) LED (Light Emitting Diode) with system power not exceeding 36W., Luminous flux of luminaire minimum 4000 lm, color temperature of 4000 K, CRI > 80, 230V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, Energy-efficient LEDs, Direct-Indirect light emission, Luminaire profile in aluminium with Polyester powder white colored coat, Slide-in prismatic diffuser for a homogenous light distribution, internal wiring of fitting shall be with FRLS wire, integral electronic control gear, R9>0.Protection class I, minimum IP-20 rating, SDCM (Standard Deviation Colour Matching) <3,THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf >0.95 (Minimum lenght of fitting 1150 mm) etc. complete as required at site.	4	each	19308	77232.00
2.4	SITC of Recessed downlight with HPE (High-Performance Efficiency) LED (Light Emitting Diode) with system power not exceeding 15W, Luminous flux of luminaire minimum 1500 lm, Colour temperature of 4000 K, CRI > 80, 230V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, energy-efficient LEDs, direct light emission, housing in die-cast				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	aluminium with Polyester powder white coloured coat, prismatic diffuser-UGR<19 for homogenous light distribution, internal wiring of fitting shall be with FRLS wire, Electronic control gear, Protection class II, minimum IP-20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf>0.95. (Minimum DiaMeter of fitting 160 mm.) etc. complete as required at site.	109	each	1496	163064.00
2.5	SITC of COB based recessed downlight luminaire with System power not exceeding 12W, Luminous flux of luminaire minimum 1200 lm, Colour temperature of 4000K, CRI >80, 230V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, Energy-efficient COB, Direct light emission, Luminaire housing in aluminium with Polyester powder White coloured coat, anti-glare reflector Pearl Black Reflector with 60 degree beam angle, internal wiring of fitting shall be with FRLS wire, Electronic control gear-R9>0. Protection class II, minimum IP-20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency >85%, Surge protection of 2.5kV, Pf >0.95.(Minimum DiaMeter of fitting 95 mm) etc. complete as required at site.	197	each	2376	468072.00
2.6	SITC Recessed ceiling luminaire with LED (Light Emitting Diode) with system power not exceeding 25 W, luminous flux of luminaire minimum 2500 lm, colour temperature of 4000 K, 230 V constant current driver, CRI > 80, R9>0, constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, energy-efficient LEDs, direct light emission, luminaire housing in Aluminium with polyester powder-white colour coat, Prismatic diffuser for glare-free uniform light, integral electronic control gear, Protection class I, Minimum IP20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf>0.95. (Minimum DiaMeter of fitting 300 mm) etc. complete as required at site.	28	each	10412	291536.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
2.7	SITC of Recessed ceiling luminaire with LED (Light Emitting Diode) with system power not exceeding 35W, luminous flux of luminaire minimum 3500 lm, colour temperature of 4000 K, 230 V. constant current driver, CRI > 80, R9>0, constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, energy-efficient LEDs, direct light emission, luminaire housing in Aluminium with polyester powder-white colour coat, Prismatic diffuser for glare-free uniform light, integral electronic control gear, Protection class I, Minimum IP20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf >0.95 (Minimum DiaMeter of fitting 500 mm) etc. complete as required at site.	2	each	13579	27158.00
2.8	SITC of Pendant luminaire with HE-High Efficiency LED (Light Emitting Diode) with system power not exceeding 15W, luminous flux of luminaire minimum 1300 lm, colour temperature of 4000K, CRI>80, 230V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, direct light emission, curved luminaire profile in aluminium with polyester powder-white colour coat, Snap Fit Prismatic diffuser for uniform illumination, Electronic control gear. NOTE-inner curve radius minimum 350 mm. Protection class I, Minimum IP20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV,Pf >0.95. (Minimum Length of fitting 990 mm) etc. complete as required at site.	13	meter	10510	136630.00
2.9	SITC of COB based recessed downlight with system power not exceeding 15W, luminous flux of luminaire minimum 1250 lm, CRI > 80, 230 V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, Colour temperature of 4000 K, direct light emission, housing made of die-cast aluminium trim with polyester powder White coloured coat, with anti-glare reflector and 55° beam angle, electronic control gear.R9>0. Protection class II, Minimum IP20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency>85%, Surge protection of 2.5kV, Pf >0.95.(Minimum DiaMeter of fitting 100 mm) etc. complete as required at site.	51	each	3314	169014.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
2.10	SITC of Pendant luminaire with CRCA shade luminaire with HPE (High-Performance Efficiency) suitable for E27 holder with LED lamp with system power not exceeding 12W, Luminous flux of luminaire minimum 840 lm, Colour temperature of 4000 K, CRI > 80, 230 V. constant current driver, 70% of luminous flux after 50,000 Burning hours and should have LM 80 and LM 79 test report, energy-efficient LEDs, direct light emission, Luminaire housing in CRCA, internal wiring of fitting shall be with FRLS wire, Protection class I, Minimum IP 20 rating, SDCM (Standard Deviation Colour Matching) <3, THD<10%, Driver efficiency >85%, Surge protection of 2.5kV, Pf > 0.95 (Minimum DiaMeter of fitting 370 mm) etc. complete as required at site.	6	each	5231	31386.00
2.11	SITC of Pendant luminaire with LED (Light Emitting Diode) with system power not exceeding 72W., luminous flux of luminaire minimum 7920lm, color temperature of 4000 K, CRI >80, 230 V. constant current driver, direct-indirect light emission, aluminium housing with polyester powder coated white colour, Opal diffuser, internal wiring of fitting shall be with FRLS wire, electronic control gear, Protection class I, Minimum IP 20 rating, SDCM (Standard Deviation Colour Matching) <3, T.H.D < 10%, driver efficiency > 85%, surge protection of 2.5 kV, Pf > 0.95 (Minimum Length 1180 mm) etc. complete as required at site.	2	each	9923	19846.00
2.12	SITC of 400 mm sweep hi speed wall mounting Fan with built in regulator and supporting mounting Bracket i/c Pull cord control for speed & oscillation on-off, Air delivery minimum 95CMM, speed not less than 2000 rpm, Suitable for 230V 50 Hz, single phase AC Supply etc. complete as required.	50	each	3968.00	198400.00
	Total of 2 (In Rs.)				22,29,185.00
	Total SH-I =Total of 1+ Total of 2 (In Rs.)				88,20,173.00
	SH-II - LV SERVICES				
3	LAN & NETWORK SERVICES				
3.1	Supply, installation, testing and commissioning of 24 port Cat6 Patch Panel loaded. Must be of 1U height with clear label holders and white label with the panel. 24 Ports Cat-6 Patch Panel should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.	9	each	5278.00	47,502.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
3.2	S/I/T/C of L3 Core Switch with 26 SFP+ ports and 2 QSFP28 ports. SFP+ ports operate as 1/10GE. QSFP28 ports operate as 100/40GE, Stackable L3 Core Managed Enterprise Switch with Redundant and Hot-Swappable Power Supply. 32 GB or Higher Flash Memory; 8 GB or Higher SDRAM, 480Gbps or Higher switching capacity; 920 Gbps or higher Stacking Bandwidth; The switch should support StackPower Technology or Similar, 4K VLAN ID; 680 Mpps or higher forwarding rate; The switch should support various routing protocols like Static / RIP V1 & V2 / RIPng / EIGRP / OSPF. The switch should support standard protocols: IEEE 802.1D STP, IEEE 802.1p CoS Prioritization; IEEE 802.1ab (LLDP); IEEE 802.3 10Base-T; IEEE802.3U 100Base-Tx, IEEE 802.3ab 1000Base-T; IEEE 802.3ae 10GbE, IEEE 802.3z 1000 Base-X; IEEE 802.3x Full Duplex Mode; SNMP v1, V2c and V3; UL, EN; IEC; EMC; CE, FCC,RoHS. EAL/NDPP Certified. The Switch should be supplied with required Stack Modules, Stack Cables etc.complete as required.	1	each	541301.00	541301.00
3.3	SITC of 28 Port layer 2 consist of 24 Each Gigabit RJ-45 Ports , 2 Each Combo Gigabit RJ-45 / SFP Ports , Fixed 2 x SFP+, Console Port ,USB/OoB Management Port , 800MHz ARM v7, File System Flash 1 GB, RAM 1 GB, Packet Buffers 1.5MB, Max Switching ASIC Capacity 92 Gb/S, Switching Capacity 92 Gb/S, Throughput 68.5 Mpps, 2x10GE VFL Capacity 40 Gb/s, System Heat Dissipation (Idle) 82 (BTU/h), etc complete as required.	9	each	75966.00	683694.00
3.4	SITC of 1 Meter long 10Gbs SFP+ direct stacking cable,etc complete as required.	9	each	4649.00	41841.00
3.5	SITC of 1000Base-SX Gigabit Ethernet optical transceiver SFP MSA, Supports multimode fiber over 850nm wavelength nominal with an LC connector, Typical rEach of 300m on 62.5/125 m MMF or 550m on 50/125 m MMF,etc complete as required.	1	nos	8440.00	8440.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
3.6	Supply, installation, testing and commissioning of LC–LC OM4 Duplex Fiber Patch Cord, 3 Meters long, with high-precision ceramic ferrule, good concentricity, 2 mm cable type, repeatability < 0.2 dB, apex offset < 50 µm, fiber height +100 nm, end-face radius of curvature 7 mm < R < 25 mm, suitable for operating temperature –5°C to +50°C and storage temperature –10°C to +50°C,etc complete as required.	2	each	2296.00	4592.00
3.7	Supplying and fixing of existing multimode Fiber Patch Panel for termination of OFC cable with all required interconnecting accessories such as 12 Port LIU patch panel, pigtails, Duplex Adopter ,slicing and any other accessories required for complete the job etc complete as required .	2	Job	19051.00	38102.00
3.8	Supplying, Installation, Testing and commissioning of following CAT6 Patch Cord should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.				
3.8.1	Copper Patch Cords of length 3m (10ft)	110	each	227.00	24970.00
3.8.2	Copper Patch Cords of length 1m (3ft)	140	each	151.00	21140.00
3.9	Supplying and drawing following core Multi mode Fiber Optic Cable having corrugated steel armoring, leser optimize 50/125 µm with HDPE jacket, LSZH (Low smoke Zero Halogen), Tight buffered or loose tube, maximum attenuation: ≤ 3.5 dB/km at 850 nm, ≤1.5 dB/km at 1300 nm, bandwidth ≥ 2000 MHz-km at 850 nm, ≥ 500 MHz-km at 1300 nm compliance and certifications: ISO/IEC 11801 Ed. 2.2, ANSI/TIA-568-C.3, ITU-T G.651.1 RoHS compliant. Multi Mode Fiber shall be Centralloose tube filled with Thixotropic jelly, duly following Standards: ISO 11801, IEC 60793-1/60794-1-2, ITU-T-REC G.652D and Telecordia GR-20-core, High quality Electro Chromium Coated Corrugated Steel tape (ECCS) and HDPE- Sheath, Operating ambient Temperature should be – 5 deg C to +50 deg C and Storage Temperature should be – 5 deg C to +50 deg C, Maximum Attenuation ± 3.5 db / km at Operational Wavelength 850 nm and ± 1.5 db / km at Operational Wavelength 1300 nm . type of fiber should be 50/125 / G.652D & Refractive Index should be 1.483/1.478, The value for Mode filed,Cladding DiaMeter 50 ± 2.5 µm and 125 ± 1µm corospondingly etc complete as required.				
3.9.1	6 Core Multi Mode Optical Fiber Cable	100	meter	87.00	8700.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
3.10	Supply and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U'Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.				
3.10.1	15U Rack	2	each	13330.00	26660.00
3.11	Supply and fixing 42U Rack with 6 inch Castor wheels and front brake Floor Standing Rack with Main Frame Pillar of 1.6mm CRCA Sheet with removable side panels, L- Shape adjustable Vertical Mounting Rail of 2mm with 'U'Marking completely knocked-down condition (CKD) Shape, fitted with 4 number cooling fans, minimum 8Each two line cable entry/exit provision at top and bottom with rubber protection, Front door 5mm Toughened Glass with MS frame or MS perforated with lock, Rear MS vented or perforated door, Powder coated Color- RAL- 7035 or black, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.	1	each	32954.00	32954.00
3.12	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diaMeter should be in the range of 6.1mm nominal with Operating Temperature Range : -5° to +60°C. Bending Radius : < 4 X Cable DiaMeter at -5°C ± 1°C and Pulling Force : 11.5Kg etc. complete as required.				
3.12.1	1 run of cable	1000	meter	60.00	60000.00
3.12.2	2 run of cable	600	meter	96.00	57600.00
3.12.3	3 run of cable	500	meter	131.00	65500.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
3.13	Supplying and fixing of following sizes of medium class PVC conduit, alongwith accessories in surface/ recessed i/c cutting the wall and making good the same in case of recessed conduit as required.				
3.13.1	20 mm	1000	meter	151.00	151000.00
3.13.2	25 mm	1100	meter	168.00	184800.00
3.14	Supplying, Installation, Testing and commissioning of indoor Wireless Access Point for High density use having features and specifications etc. as mentioned here under- WiFi6 802.11ax 574Mbps (2.4GHz) + 2402Mbps (5GHz), WIFI 6 Certified, 1 x RJ45 console port, MG 2.5G LAN POE Port, factory reset,WPA/WPA2/WPA3™ Personal/Enterprise, WEP 64/128-bit, SSID broadcast disable, MAC address access control, Internal RADIUS server, SNMP, Customizable Captive Portal, Auto Channel, Works as Access Point, WDS, WDS with AP, Wireless Client ., Web (HTTP), Secure Socket Layer (SSL), Traffic control, Support ATF/Fast Roaming/Band Steering, Supports enhanced security – WPA-PSK/WPA2 PSK/WPA3-PSK and RADIUS client, and Cipher negotiation, and MAC/ IP ACL for networks, Certifications: MTCTE, CE, FCC. Works as Standalone, Compatible with S/W & H/W				
	Controller with addtional features like - Real-Time Monitoring and Alerts, Rich Advanced Features, Centralized Device Management, Role-Based Administration, Real-Time Monitoring, VLAN and Access Control, Auto RF Management and Bandwidth Optimization, Multi-SSID and Captive Portal Authentication. OEM / product must be on trusted Telecom Portal of Department of Telecommunication, Govt. of India etc. complete as required.	30	each	35559	1066770.00
3.15	Supplying, Installation, Testing and commissioning of small form-Pluggable (SFP) for Network Switches. Must be hot Pluggable, RoHS Complaint, etc. complete as required.				
3.15.1	10 G SFP + Single Mode/Multi Mode	15	each	14972.00	224580.00
	TOTAL of 3(In Rs.)				3290146.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
4	IP BASED EPABX SYSTEM AND ACCESSORIES				
4.1	Supply, installation, testing and commissioning of IP EPABX system with True IP Architecture, Voice Server configured as below: 01 PRI Lines, 08 CO Trunks, 110 IP/SIP Extensions, licensed features inbuilt like: Personal Assistant, Rainbow UCaaS Hybrid Cloud Solution for Business Collaboration and Communications, Rainbow Essential Licenses Bundle, Pimphony Basic 200 license CTI Integration, Voice mail 1 Hr/2 ports default for all users, Distribution list and online recording feature license, 6 party meet me conference license, Direct Inward System Access (DISA), Automatic Route Selection (ARS), Hot desking 2 user license, 16 inbuilt Voice compression DSP resources, IP ready from day one, SIP Openness, Inbuilt PMS/HMS Link etc. complete as required.	1	each	537450.00	537450.00
4.2	SITC of Dual Port Gigabit Ethernet Essential DeskPhone, Dual Stack NOE-SIP, 3.5 inch 320x240 colour display, HD Audio,1 USB-A,1 USB-C.Ships without Network cable,etc,complete as required.	34	each	14367.00	488478.00
4.3	SITC of Dual Port Gigabit Ethernet High Performance SIP Phone 2.8" 132x64 B&W display with backlight, 3 SIP accounts, 3 Line Keys, 4 soft Keys, HD Audio, RJ9 Headset Port,etc, complete as required.	76	each	4767.00	362292.00
4.4	Supply, installation, testing and commissioning of 24 port Cat6 Patch Panel loaded. Must be of 1U height with clear label holders and white label with the panel. 24 Ports Cat-6 Patch Panel should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.	5	each	5278.00	26390.00
4.5	SITC of 28 Port POE switch having 24 Each Gigabit PoE RJ-45 Ports , Fixed 4 x SFP, etc complete as required.	6	each	53699.00	322194.00
4.6	SITC of 1000Base-SX Gigabit Ethernet optical transceiver SFP MSA, Supports multimode fiber over 850nm wavelength nominal with an LC connector, Typical rEach of 300m on 62.5/125 m MMF or 550m on 50/125 m MMF,etc complete as required.	5	each	8440.00	42200.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
4.7	Supply, installation, testing and commissioning of LC–LC OM4 Duplex Fiber Patch Cord, 3 Meters long, with high-precision ceramic ferrule, good concentricity, 2 mm cable type, repeatability < 0.2 dB, apex offset < 50 µm, fiber height +100 nm, end-face radius of curvature 7 mm < R < 25 mm, suitable for operating temperature –5°C to +50°C and storage temperature –10°C to +50°C, complete as required.	5	each	2296.00	11480.00
4.8	Supplying and fixing of existing multimode Fiber Patch Panel for termination of OFC cable with all required interconnecting accessories such as 12 Port LIU patch panel, pigtails, Duplex Adopter ,slicing and any other accessories required for complete the job etc complete as required .	2	Job	19051.00	38102.00
4.9	Supplying, Installation, Testing and commissioning of following CAT6 Patch Cord should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.				
4.9.1	Copper Patch Cords of length 3m (10ft)	200	each	227.00	45400.00
4.9.2	Copper Patch Cords of length 1m (3ft)	110	each	151.00	16610.00
4.10	Supplying and drawing following core Multi mode Fiber Optic Cable having corrugated steel armoring, leser optimize 50/125 µm with HDPE jacket, LSZH (Low smoke Zero Halogen), Tight buffered or loose tube, maximum attenuation: ≤ 3.5 dB/km at 850 nm, ≤1.5 dB/km at 1300 nm, bandwidth ≥ 2000 MHz-km at 850 nm, ≥ 500 MHz-km at 1300 nm compliance and certifications: ISO/IEC 11801 Ed. 2.2, ANSI/TIA-568-C.3, ITU-T G.651.1 RoHS compliant. Multi Mode Fiber shall be Centralloose tube filled with Thixotropic jelly, duly following Standards: ISO 11801, IEC 60793-1/60794-1-2, ITU-T-REC G.652D and Telecordia GR-20-core, High quality Electro Chromium Coated Corrugated Steel tape (ECCS) and HDPE- Sheath, Operating ambient Temperature should be – 5 deg C to +50 deg C and Storage Temperature should be – 5 deg C to +50 deg C, Maximum Attenuation ± 3.5 db / km at Operational Wavelength 850 nm and ± 1.5 db / km at Operational Wavelength 1300 nm . type of fiber should be 50/125 / G.652D & Refractive Index should be 1.483/1.478, The value for Mode filed,Cladding DiaMeter 50 ± 2.5 µm and 125 ± 1µm corospondingly etc complete as required.				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
4.10.1	6 Core Multi Mode Optical Fiber Cable	110	meter	87.00	9570.00
4.11	Supply and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U'Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.				
4.11.1	15 U Rack	3	each	13330.00	39990.00
4.12	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diaMeter should be in the range of 6.1mm nominal with Operating Temperature Range : -5° to +60°C. Bending Radius : < 4 X Cable DiaMeter at -5°C ± 1°C and Pulling Force : 11.5Kg etc complete as required.				
4.12.1	1 run of cable	300	meter	60.00	18000.00
4.12.2	2 run of cable	400	meter	96.00	38400.00
4.12.3	3 run of cable	200	meter	131.00	26200.00
4.13	Supplying and fixing of following sizes of medium class PVC conduit, alongwith accessories in surface/ recessed i/c cutting the wall and making good the same in case of recessed conduit as required.				
4.13.1	20 mm	300	meter	151.00	45300.00
4.13.2	25 mm	700	meter	168.00	117600.00
4.14	Supplying, Installation, Testing and commissioning of small form-Pluggable (SFP) for Network Switches. Must be hot Pluggable, RoHS Complaint, etc. complete as required.				
4.14.1	10 G SFP + Single Mode/Multi Mode	10	each	14972.00	149720.00
Total of 4 (In Rs.)					23,35,376.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
5	CCTV SYSTEM				
5.1	Supplying Installation Testing and Commissioning of 8 MP IP IR Dome Camera having following specifications and features etc :- 1) Type of Camera: Dome Camera 2) Image Sensor: 1/2.8" or better progressive Scan CMOS get color image even at night condition 3) Signal System: PAL/NTSC 4) Minimum Illumination: 0.006 Lux@ F1.4, AGC ON, 0 lux with IR or better 5) Imaging: 1/3s to 1/30000s, Auto Gain Control , White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking. 6) On Screen Display: Camera should display Camera title, Date & Time in live & recorded video both. 7) Signal to Noise Ratio: > 50 dB 8) Day & Night: True Day & Night High Performance Mechanical IR cut filter with auto switch, IR Source- Inbuilt IR LED's with effective distance upto 50 Mtrs integrated IR and 30 Meter for colour view in night. 9) Video Compression (Minimum): H.265 or better, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723				
	10) Wide Dynamic Range: WDR (120db or more) 11) Digital Noise Reduction: DNR (2D/3D) On/Off 12) Streaming: Triple streaming, configurable 13) Video Streaming & Frame Rates: Triple streaming , configurable Main stream: 8MP (3840 × 2160)@20 fps, Sub streams: 4MP (2688×1520)@25/30 fps & D1@25/30 fps; 14) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser 15) Profile Management: User configuration import, export 16) Security: User Authentication, Water Marking				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	17) Onboard Storage: Camera should support built-in Micro SD/SDHC/SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memory Card. 18) Recording Management: Format SD, overwrite, storage management, video to NAS device, 19) Edge Analytics: Tripwire, Intrusion, Motion Detection				
	20) Alarm Trigger: Motion/tampering detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection 21) Alarm Support: It should have 1/1 Alarm In/ Out Port 22) Audio Support: It should have 1x Built-In Mic and 1/1 Audio In/ Out Port for external Mic. and Speaker (As per site requirement) with G.711U/A/ G.711Mu/ AAC/ G.726 audio compression 23) Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP, NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, unicast, 24) System Capability: ONVIF 25) VMS: Camera shall support open source VMS 26) Cyber Security: trusted boot, AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, video encryption, IP/MAC filtering, HTTPS, trusted upgrade. 27) Ethernet: 1 RJ 45 10/100 Ethernet port				
	28) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE—to ensure continuous operation in the event of a failure in one power source. 29) Power Requirement: 12VDC/24 VAC/PoE (802.3af)/ePoE 30) Enclosure: IP67 weather proof, IK10 31) Operating Condition: Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing) 32) IR life: 40000 hours or higher 33) Video Bit rate: 32 KBPS - 8 MBPS or better 34) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
5.1.1	8 MP (3840 × 2160) or better IP IR 2.7mm to 4mm ~ 12 to 13.5mm Motorized lens, Vari Focal Dome Camera.	9	each	28073.00	252657.00
5.2	Supplying Installation Testing and Commissioning of following Channel Network Video Recorder (NVR) with camera licenses to record for all channels having specifications and features etc as mentioned below :				
	1) Network Video Recorder Embedded/ Installed OS (Linux) along with Camera Licenses for number of channels of NVR to record per NVR and to provide a live view, storage and simultaneously Multi-channel playback of all IP, IR camera or more and must be ONVIF with minimum support of 256Mbps incoming Bandwidth. 2) NVR should support H.265 or better, H.264, MJPEG, MPEG4 support 3) Must support 1 channel Input, 1 channel Output, RCA for Two-way Talk 4) Intelligent auto power on when power resumes after power outage. 5) Storage: It should support minimum 2 SATA Slots with 20TB capacity/ Slot. 6) Connectivity Interface : 1 Each. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS232 7) Backup Interface : Its should have 2 Eachx USB port (1x USB3.0, 1xUSB2.0) 8) Video Output Ports: 1x HDMI and 1 VGA 9) Alarm Ports: It should have 4/1 Ch In/ Out ports to connect various type of external sensors and output devices like hooter/ Siren etc.				
	10) Email & SMS Alert options: Option for SMS/ Email Alerts to minimum 5 designated mobile number for power failure, HDD failure, vandalism, tampering, network disconnection and panic 11) Web & Mobile Application: Web, Mobile app (For iPhone, iPad, Android Phone) for alerts and viewing. 12) Protocols: HTTP, HTTPS, TCP/IP, IPv4, UDP, NTP, DHCP, DNS, SMTP, UPnP, DDNS, Alarm Server, IP Search, Multicast, Auto Registration, ONVIF (Profile T, Profile S, Profile G), CGI, SDK and OEM Cloud for remote monitoring without any public IP need. 13) Standards: CE, FCC, RoHS and BIS Certified				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	14) Power Supply : Should support 12VDC, 4Amp or AC100-240V, 50/60Hz Power supply. 15) Operating Condition : Ambient Temperature (-5°C to 50°C), humidity 90% (max) (non-condensing) 16) The VMS, NVR application shall support all the features & functionalities of the offered cameras. 17) VMS should consist of Base license and Channel Licenses. VMS should be provided with camera Licenses , with no dependency of VMS licenses by binding with the MAC address of the cameras to achieve the functionality. 18) The NVR OEM shall be responsible for providing a mobile application compatible with both Android and iOS devices, enabling remote monitoring and playback of cameras/NVR footage.				
	21) Must support recording resolution upto 32MP 22) Must support Continuous, Alarm, Motion, Instant, Panic Recording Mode 23) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoring page to view the alert details. The snapshot function is supported on monitoring and playback page 24) The Network Video Recorder (NVR) shall be configured to send email whenever a system message is created or an alarm event occurs. The email server shall be a valid SMTP server. Each recipient email address shall be configured to receive any combination of critical, warning, or informational messages or alarm notifications. When an alarm occurs, the email message includes the NVR name, time of alarm and a list of camera that is configured to record upon alarm.				
	25) It should support Network Support: HTTP, TCP/IP, SMTP, DHCP, DNS, DDNS, FTP, NTP, UPnP, Multi IP Setting. Convert multiple recording files to one avi/MP4 file. 26) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People Each Exception Detection, People Staying Detection, Violence Detection.				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	27) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, periMeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan 28) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email. 29) Built-In Artificial Intelligence: NVR should have built-in AI :-- 2 Channel face detection and recognition, - Minimum 4 Channel periMeter protection, - Minimum 8 Channel Smart Motion Detection 30) Face Recognition Database Capacity: It should support total Blacklist and Whitelist capacity of Minimum 20,000 Faces or more with Face Detection speed of 12 face images/sec. 31) Face & Human Attributes Search: Search Pictures/ Video by Gender, age group, glasses, expressions, face mask, beard, Top color, top type, hat, bag, age, gender and umbrella. 32) ANPR Capability: It should support ANPR Camera with License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle registration location etc vehicle attributes.				
	33) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, periMeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan, cybersecurity exception 34) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email. 35) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People Each Exception Detection, People Staying Detection, Violence Detection. 36) Smart playback function: Should support smart search for the selected area in the video and smart playback to improve the playback efficiency 37) VCA (Video Content Analytic): Should support multiple video contented analytics based on camera analytics.				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
5.2.1	16 Channel Network Video Recorder (NVR) having display split :- Main screen: 1/4/8/9/16, 2nd screen: 1/4/8/9/16	1	each	12799.00	12799.00
5.3	Supplying, Installation, Testing and Commissioning following capacity Surveillance grade Hard Disk with upto 256MB/s Transfer Rate, 256 MB Cache, 7200 RPM Disk Speed, 3.5 inch form factor, SATA Interface, BSMI, ICES-003/NNB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL Certifications.				
5.3.1	10 TB (Terabytes).	2	each	24798.00	49596.00
5.4	Supply, Installation, Testing and Commissioning of 55" 4K UHD Display supporting contrast ratio of 4000:1, with brightness of 300 nits supporting inbuilt Signage platform with software featuring, Custom Home, Auto Source Switching & Recovery, Workspace (Microsoft 365/VMWare/RDP) Dicom Simulation Mode, Director Mode. The system should also have built in Wifi module supporting dual band - 2.4 and 5 GHz along with Bluetooth, should also have ambient sensors, temperature sensor. 3 HDMI2.0 port, should support HDCP 2.2 version and speaker should support 10W 2 Channels. This display should have Energy Star ratings along with IP5x rating as add on feature etc complete as required.	1	each	63459.00	63459.00
5.5	SITC of 10-Port Gigabit Managed PoE Switch with 8 X 10 /100 /1000 BASE-T PoE ports, 2 Gigabit copper/SFP combo ports, 20 Gbps Switching Capacity ,1.5 Mbits Packet Buffer Memory , PoE Power Budget 67W, etc complete as required.	2	each	31486.00	62972.00
5.6	Supply, Installation, Testing and Commissioning of 15 Mtr. High Speed HDMI Cable Standard is designed for fully reliable performance for 4k / UHD up to 4K60 (4K @ 60frames per second) and support for HDR (High Dynamic Range) and expanded colour spacing etc complete as required.	2	each	4602.00	9204.00
5.7	Suppling and drawing of armoured co-axial UTP Cat -6 communication cable ,shielded and protected with PVC sheath in the existing surface /recess steel/PVC Conduit /PVC trunking etc complete as required.	610	meter	122.00	74420.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
5.8	Supply and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U'Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.				
5.8.1	15 U Rack	1	each	13330.00	13330.00
	TOTAL of 5(IN Rs.)				5,38,437.00
	Total of SH-II (In Rs.)= Total 3 + Total 4+ Total 5				61,63,959.00
	SH-III - AUDIO VIDEO SYSTEM				
6	MEETING ROOM 1ST FLOOR				
6.1	Supply, Installation, Testing and Commissioning of 55" 4K UHD Display supporting contrast ratio of 4000:1, with brightness of 300 nits supporting inbuilt Signage platform with software featuring, Custom Home, Auto Source Switching & Recovery, Workspace (Microsoft365/VMWare/RDP) Dicom Simulation Mode, Director Mode. The system should also have built in Wifi module supporting dual band - 2.4 and 5 GHz along with Bluetooth, should also have ambient sensors, temperature sensor. 3 HDMI2.0 port, should support HDCP 2.2 version and speaker should support 10W 2 Channels. This display should have Energy Star ratings along with IP5x rating as addon feature complete etc as required.	1	each	63459.00	63,459.00
6.2	SITC of HDMI 20 Mtr cable -Ideal for HDTV 1080p, To transmit high definition picture & digital sound,Suitable for standard DVD ,Set Top Box and Display etc complete as required.	1	each	5654.00	5,654.00
	TOTAL OF 6(In Rs.)				69,113.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
7	BOARD ROOM 1ST FLOOR				
7.1	Supply, Installation, Testing, and Commissioning of 86" 4k Interactive Anti-Glare Panel with 4GB RAM and 32GB storage, flash memory 64 GB with Android 11.0 but should be upgraded till Android 13.0, color gamut minimum 72%, 20 touches supported in Android along with multiple apps such as Note, Screenshare, browser finder, should have Built-in Speaker (12W x 2CH) with Min brightness less of 390 units and 1200:1 contrast ratio. Panel should have USB C port for screen presentation, WiFi, bluetooth, RJ45 ports, touch control and Multiple screens not less than 5 should be able to be presented on the display using Miracast functionality from any device. Display also come with Display Management Software to manage display from anywhere in the network including suitable size wall/floor stand with hardware for fixing as desired by Engineer in charge etc complete as required.	1	each	234918.00	234918.00
7.2	Supply, Installation, Testing, and Commissioning of OPS (Open Pluggable Specification) modules for interactive flat panels to add computing power and functionality to these displays. Should have Intel Core i5 Processor, 8GB RAM, 128GB storage, Integrated Intel graphics, HDMI, DisplayPort (DP), USB 3.0 and 2.0 ports, Ethernet (LAN), and Wi-Fi connectivity. Should have various operating systems like Windows 10/11 commonly supported and power 12V~19V input with a maximum power consumption of around 65W etc as required at site.	1	each	37667.00	37667.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
7.3	Supply, Installation, Testing and Commissioning of AI based minimum 2.16 MP CMOS Full HD 1080p @ 60fps Presenter PTZ Tracking Camera with Dual Camera- one PTZ Camera for Presenter Tracking and second fixed lens Panoramic Camera. PTZ Presenter Camera should support min 12X Optical Zoom and 12x Digital Zoom with Panning range of +170 deg to - 170 deg and Tilt Range of -30 to +90 Degrees, Field of View for PTZ Camera should be min 58 Degree and for Panoramic Camera min. 100 Degree, camera should support simultaneous outputs through HDMI, 3G-SDI, USB 3.0 and IP with 1x Audio In and can be controlled via RS232 and IP. Should support multiple video streams. Tracking Camera should support Everywhere Tracking, Partition Tracking, Auto Framing & Gesture Control. Should support PoE and Virtual USB Driver including installation arrangement etc complete as required.	1	each	204112.00	204112.00
7.4	Supply, Installation, Testing and Commissioning of pre-polarized condenser gooseneck microphone with an overall length of minimum 450 mm and with XLR3M-type connector at its base, which shall offer radio frequency interference (RFI) shielding against intermodulation from wireless equipment or devices, cardioid microphone capsule with uniform 120° angle of acceptance (-3dB) or better, frequency response of 50 Hz to 20,000 Hz or better and sound input levels handling capability of minimum 130 dBspl,				
	nominal equivalent noise level of 26 Dba or better and output shall be low impedance balanced (<100 ohms) with current consumption shall be 3 mA or better inclusive of table stand for connecting and operating XLR gooseneck microphones shall be rugged and unobtrusive with XLR-3F microphone input and an XLR-3M microphone output operating on 48 V phantom power and current consumption of 3.7 mA or better etc as required.	17	each	40023.00	680391.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
7.5	Supply, Installation, Testing & Commissioning Digital wireless handheld Microphone with UHF transmission greatly enhances range, reliability and scalability of 56 MHz Bandwidth that will allow for up to 90 channels Up to 2,240 selectable frequencies with Mobile App streamlines setup and operation and eliminates complicated menus and Automated setup creates reliable connections with minimal time and effort , Preserves every detail of even the most dynamic performances with 134 dB transmitter dynamic range Lithium Ion battery pack delivers up to 12 hours of operation (up to 8 hours of operation with AA batteries) with Transducer principle dynamic with Pick-up pattern cardioid, Sound pressure level 154 dB SPL, Transmit power (radiated) Audio link: 10 mW ERP (Range Y1-3: 12 mW ERP) BLE: max. 10 mW EIRP etc as required.	2	set	72880.00	145760.00
7.6	Supply, Installation, Testing and Commissioning of Linear Column Loudspeaker, 6 X 2.5" active drivers & 2 x 2.5" Passive Radiators ; Max Power Handling 400W @ 8 Ohms; Multiple 100V Taps: 60W / 30W / 15W; Frequency range 70Hz – 15Khz; Sensitivity 90 dB and Max SPL 119 dB; Beamwidth 130° x 20° (H X V) ; IP55 Rated; Operating Temperature -20°C to 50°C; Aluminium Housing Plastic covers with Steel grille. Mounting Bracket Included etc as required.	2	each	61539.00	123078.00
7.7	Supply, Installation, Testing and Commissioning of DSP 16 X 4 DSP with AEC Functionality,DSP considered as 17 Button Microphone on table for 17 seaters and 1 Handheld mic to pass to back bencheres etc as required.	1	each	328944.00	328944.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
7.8	Supply, Installation, Testing and Commissioning of 2-channel power amplifier with a continuous power output of 2 x 250 W at 4 Ω , 2 x 150 W at 8 Ω , and 500 W in bridged 8 Ω mode, with a frequency response of 20 Hz to 20 kHz (± 0.5 dB), total harmonic distortion below 0.05%, signal-to-noise ratio greater than 100 dB, and input sensitivity of 1.4 V/0 dBu; it has balanced XLR and 1/4" TRS inputs, Speakon and binding post outputs, forced-air cooling, protection circuits for DC, short circuit, overload, and thermal faults, operates on AC 220-240 V, 50/60 Hz, and is housed in a 2U rack-mountable chassis etc as required.	1	each	106178.00	106178.00
7.9	Supply, Installation, Testing and Commissioning of HDMI to USB Capture device with Full HD 1080p resolution through your system's USB 3.0 port with an optional HDMI loop out that supports resolutions up to 4K @60Hz. an optional HDMI loop-out that supports resolutions up to 4K @60Hz etc as required.	2	each	28731.00	57462.00
7.10	SITC of HDMI 20 Mtr cable -Ideal for HDTV 1080p, To transmit high definition picture & digital sound,Suitable for standard DVD ,Set Top Box and Display etc as required	4	each	5654.00	22616.00
7.11	SITC of HDMI switcher with eight HDMI video inputs and eight HDMI output , Supports video resolution up to 4Kx2K@60Hz 8:8 HDR,18 Gbps high bandwidth,Fully compliant with the HDMI 2.0 and HDCP2.2 specifications,Supports audio return channel (ARC),Advanced EDID management,Controllable via RS232 and IR,Supports CEC,Provides LEDs to indicate the current operating status , etc as required.	1	each	102905.00	102905.00
7.12	Supplying and drawing of PVC insulated copper conductor speaker cable in the existing surface / recessed PVC conduit of following pairs, cores and size including connections and interconnections etc. as required.				
7.12.1	speaker cable 2-core, 1.5sqmm	100	meter	60.00	6000.00
7.13	Supply, Installation, Testing and Commissioning of Crimp-style shielded RJ45 connector designed to fit larger 23AWG cables, but also fits 24AWG cable, should have an overall insulation diaMeter of 1.40mm to 1.50mm Should be from the same OEM as of shielded CAT6A cable etc as required.	10	each	562.00	5620.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
7.14	Suppling and drawing 2 core 2.5 sq.mm audio cable shielded and protected with PVC sheath in the existing surface / recess steel/PVC Conduit/ PVC trunking etc as required.	100	meter	205.00	20500.00
	Total of 7 (In Rs.)				20,76,151.00
8	CONFERENCE Room 1st floor				
8.1	Supply, Installation, Testing, and Commissioning of 86" 4k Interactive Anti-Glare Panel with 4GB RAM and 32GB storage,flash memory 64 GB with Android 11.0 but should be upgraded till Android 13.0,color gamut minimum72%, 20 touches supported in Android along with multiple apps such as Note, Screenshare, browser finder, should have Built-in Speaker (12W x 2CH) with Min brightness less of 390 units and 1200:1 contrast ratio. Panel should have USB C port for screen presentation, WiFi, bluetooth,RJ45 ports,touch control and Multiple screens not less than 5 should be able to be presented on the display using Miracast functionality from any device.Display also come with Display Management Software to manage display from anywhere in the network including suitable size wall/floor stand with hardware for fixing as desired by Engineer in charge etc complete as required..	1	each	234918.00	234918.00
8.2	Supply, Installation, Testing, and Commissioning of OPS (Open Pluggable Specification) modules for interactive flat panels to add computing power and functionality to these displays. Should have Intel Core i5 Processor, 8GB RAM, 128GB storage, Integrated Intel graphics, HDMI, DisplayPort (DP), USB 3.0 and 2.0 ports, Ethernet (LAN), and Wi-Fi connectivity. Should have various operating systems like Windows 10/11 commonly supported and power 12V~19V input with a maximum power consumption of around 65W etc complete as required.	1	each	37667.00	37667.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
8.3	Supply, Installation, Testing and Commissioning of AI based minimum 2.16MP CMOS Full HD 1080p @ 60fps Presenter PTZ Tracking Camera with Dual Camera- one PTZ Camera for Presenter Tracking and second fixed lens Panoramic Camera. PTZ Presenter Camera should support min 12X Optical Zoom and 12x Digital Zoom with Panning range of +170 deg to - 170 deg and Tilt Range of -30 to +90 Degrees, Field of View for PTZ Camera should be min 58 Degree and for Panoramic Camera min. 100 Degree, camera should support simultaneous outputs through HDMI, 3G-SDI, USB 3.0 and IP with 1x Audio In and can be controlled via RS232 and IP. Should support multiple video streams. Tracking Camera should support Everywhere Tracking, Partition Tracking, Auto Framing & Gesture Control. Should support PoE and Virtual USB Driver including installation arrangement etc complete as required	1	each	204112.00	204112.00
8.4	Supply, Installation, Testing & Commissioning Digital wireless handheld Microphone with UHF transmission greatly enhances range, reliability and scalability of 56 MHz Bandwidth that will allow for up to 90 channels Up to 2,240 selectable frequencies with Mobile App streamlines setup and operation and eliminates complicated menus and Automated setup creates reliable connections with minimal time and effort , Preserves every detail of even the most dynamic performances with 134 dB transmitter dynamic range Lithium Ion battery pack delivers up to 12 hours of operation (up to 8 hours of operation with AA batteries) with Transducer principle dynamic with Pick-up pattern cardioid, Sound pressure level 154 dB SPL, Transmit power (radiated) Audio link: 10 mW ERP (Range Y1-3: 12 mW ERP) BLE: max. 10 mW EIRP etc as required.	2	set	72880.00	145760.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
8.5	Supply, Installation, Testing and Commissioning of Linear Column Loudspeaker, 6 X 2.5" active drivers & 2 x 2.5" Passive Radiators ; Max Power Handling 400W @ 8 Ohms; Multiple 100V Taps: 60W / 30W / 15W; Frequency range 70Hz – 15Khz; Sensitivity 90 dB and Max SPL 119 dB; Beamwidth 130° x 20° (H X V) ; IP55 Rated; Operating Temperature - 20°C to 50°C; Aluminium Housing Plastic covers with Steel grille. Mounting Bracket Included etc as required.	2	each	61539.00	123078.00
8.6	Supply, Installation, Testing and Commissioning of 2-channel power amplifier with a continuous power output of 2 x 250 W at 4 Ω , 2 x 150 W at 8 Ω , and 500 W in bridged 8 Ω mode, with a frequency response of 20 Hz to 20 kHz (± 0.5 dB), total harmonic distortion below 0.05%, signal-to-noise ratio greater than 100 dB, and input sensitivity of 1.4 V/0 dBu; it has balanced XLR and 1/4" TRS inputs, Speakon and binding post outputs, forced-air cooling, protection circuits for DC, short circuit, overload, and thermal faults, operates on AC 220-240 V, 50/60 Hz, and is housed in a 2U rack-mountable chassis etc as required.	1	each	106178.00	106178.00
8.7	Supply, Installation, Testing and Commissioning of HDMI to USB Capture device with Full HD 1080p resolution through your system's USB 3.0 port with an optional HDMI loop out that supports resolutions up to 4K @60Hz. an optional HDMI loop-out that supports resolutions up to 4K @60Hz etc as required.	2	each	28731.00	57462.00
8.8	SITC of HDMI 20 Mtr cable -Ideal for HDTV 1080p, To transmit high definition picture & digital sound,Suitable for standard DVD ,Set Top Box and Display etc as required	4	each	5654.00	22616.00
8.9	SITC of HDMI switcher with eight HDMI video inputs and eight HDMI output , Supports video resolution up to 4Kx2K@60Hz 8:8 HDR,18 Gbps high bandwidth,Fully compliant with the HDMI 2.0 and HDCP2.2 specifications,Supports audio return channel (ARC),Advanced EDID management,Controllable via RS232 and IR,Supports CEC,Provides LEDs to indicate the current operating status , etc as required.	1	each	102905.00	102905.00
8.1	Supplying and drawing of PVC insulated copper conductor speaker cable in the existing surface / recessed PVC conduit of following pairs, cores and size including connections and interconnections etc. as required.				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
8.10.1	speaker cable 2-core, 1.5sqmm	100	meter	60.00	6000.00
8.11	Supply, Installation, Testing and Commissioning of Crimp-style shielded RJ45 connector designed to fit larger 23AWG cables, but also fits 24AWG cable, should have an overall insulation diaMeter of 1.40mm to 1.50mm Should be from the same OEM as of shielded CAT6 cable etc. as required.	10	each	562.00	5620.00
8.12	Suppling and drawing 2 core 2.5 sq.mm audio cable shielded and protected with PVC sheath in the existing surface / recess steel/PVC Conduit/ PVC trunking etc as required.	100	meter	205.00	20500.00
	Total of 8 (In Rs.)				10,66,816.00
9	Reception				
9.1	Supply, Installation, Testing & Commissioning of 75" 4K UHD resolution LED Display with Android 11, 400 nits brightness, Cortex A55 1.3Ghz processor, Mali G31MP2, Open GLES3.2, 2 GB DDR RAM, 8 GB Memory HDMI CEC, HDMI ARC, Built-in Bluetooth, Hotel mode, Meeting mode,20W built in speakers, HDMI 2.0 X 3, AV X 1, USB X 2, RJ45 X 1, SPDIF Out x 1,24/7 operational, Will Work on Chromecast i/c suitable size wall/floor stand with hardware for fixing as desired by Engineer-in-charge etc complete as reqd.	1	each	95128.00	95128.00
9.2	SITC of HDMI 20 Mtr cable -Ideal for HDTV 1080p, To transmit high definition picture & digital sound,Suitable for standard DVD ,Set Top Box and Display etc as required	1	each	5654.00	5654.00
	Total of 9 (In Rs.)				1,00,782.00
	TOTAL SH-III (In Rs.) =Total 6+Total 7 + Total 8+Total 9				33,12,862.00
SH-IV	UPS SYSTEM				
10	Online UPS- Input Supply : Three Phase, Output Supply : Three Phase				
	Supplying, installation, Testing & Commissioning of following capacity at full load (Unity Power Factor) at operating temperature 0 to 40 deg C, Relative humidity 0 to 95%, Online double conversion true sine wave Uninterrupted hot swapable (allow for the replacement or addition of battery modules without shutting down the entire system)				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	modular Power Supply (UPS) system with N+1 modules (N denotes total number of modules required for rated capacity). The UPS shall include a Rectifier, inverter, battery bank suitable for 30 minutes back up (Battery VAH capacity shall not be less than 1600 VAH per KVA of UPS rating per Hour backup time) on full load (Battery shall be VRLA, SMF in ABS Container) and Static Bypass switch along with provision for manual bypass, suitable isolation transformer for additional protection against neutral faults etc. UPS shall have inbuilt phase sequence correction.				
	The UPS systems offered are to be of the latest technology with Digital Control Microprocessor based for reliable operation using Insulated Gate Bipolar Transistor (IGBT)'s both for the rectifier & inverter (3 Level) with PWM (Pulse Width Modulation). The quality of design, manufacturing and inspection process should confirm to the relevant Inter-national standards such as IEC/EN/VDE. The operating efficiency of the UPS systems shall be >96% while operating on battery mode and delivering quality power to the 100% non-linear loads. Current total harmonic effect (THD) on the input grid shall be < 5% at 50 %load. (The required LC (inductor (L) and a capacitor (C)) filters shall be included in UPS cost), extreme power factor kit to be included to limit the input power factor (PF) to 0.99 and output power factor shall be unity (i.e. kw rating of the UPS shall be kva rating x 1), however UPS shall be suitable to take load at 0.7 lagging to 0.7 leading power factor loads.				
	UPS shall be suitable for incoming supply AC : 3Phase 400V +/-20%, 50 Hz +/-5 Hz, AC Output voltage: 3Phase 415 Volt, 50 Hz +/- 0.2Hz, Overload capacity of 120% for 10 mins, Sine wave output. Non condensing, noise level less than 60db at 1 Meter distance, protections: Input Under voltage over voltage, abnormal out voltage, battery over charging, output over current, short circuit protection, battery deep discharge protection, 10KV surge.				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	UPS must comply with low voltage electromagnetic compatibility (EMC) achieved as per EN 6204, EN6204 Part I and Part 2, it shall be a Voltage and Frequency Independent (VFI)-type UPS. Communication RS232/RS485/SNMP port open protocol for BMS integration, all hardware & software for IoT Communication as per approved by Engineering in charge.				
	Required battery racks and interconnecting copper conductor cables of suitable size and connectors and all required accoseries are inclusive of the cost). This system must provide a means for logging and alarming of all monitored points plus email notification. Forced air-cooling with integral inbuilt fans with redundancy (if one fan fail UPS should be able to handle at least 80% of the load, Noise Level 65 DB at 1 Meter distance. The system shall be in compliance IEC 62040- 1,2 & 3, IS: 16242 and CPWD Specification. Display Panel (minimum) (In-build 5 inch or more LC Display / LED) to display : a) Input: Voltage, current, Frequency. b) Bypass: Voltage, Frequency. c) Output: Voltage, frequency, Current. d) Battery: Voltage, Capacity. e) Load: KVA, KW, Percentage. f)Temperature: STS, Inverter, PFC. g) Event Logging & Statistical Data (On LCD/LED): UPS should capture and display up to 3000 events like: Over temperature / DC Bus Fail / Fan Fail / Fuse Fail / Overload / Short-circuit / Device Fail / Inverter Fail / Rectifier Fail / Bypass Fail, etc.				
	h) Statistical Data: Each of power failures / Transfers to Bypass / Total Running time, etc. i) Mains Mode of Operation /Battery Mode of Operation / Bypass feeding the load / UPS Fault /Battery charging and discharging, overload, battery voltage and battery capacity. j) Audible Alarms : Mains Failure, Battery Low Alarm, UPS Overload, Fault, Shutdown, Input Over, Under Voltage, Output Over, Under Voltage, Battery Over, Under Voltage, Over Load and short circuit, Over Temperature. The UPS should have QR code which should contain drawing, test report OEM manual,Geo- Tag of manufacturing location etc.				
10.1	60KVA (Each Power module shall be ≤ 10 KVA)	1	each	913600.00	913600.00
10.2	80KVA (Each Power module shall be ≤ 25 KVA)	1	each	1124076.00	1124076.00
	TOTAL of SH-IV = Total 10 (In Rs.)				20,37,676.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
SH-V	AIR CONDITIONING				
11.1	Outdoor Unit				
	Supply, Installation, Testing & Commissioning of Modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling/heating having 100% hermetically sealed inverter type twin Rotary/Scroll Compressor(s), minimum two compressors (with individual separate PCB) for above 14HP modules, microprocessor based Controller, top discharge type condensing unit(s) IP55 fully enclosed electric box, with R-410-A Refrigerant or equivalent with accumulator, vibration Isolators with suitable foundation etc. complete as required. To have better efficiency condenser fan shall be capable to operate at different speed with respect to load. The unit shall deliver the rated capacity and in confirmation as per IS 18728:2024 and CPWD Specifications and work even at 55°C ambient temperature without tripping. The system shall be able to deliver 100% of the rated capacity upto 39 Degree Celcius. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply and BMS compatible.				
	The unit shall be filled with first charge of the refrigerant and ready for use as required. The condenser should be coated with a hydrophilic film to prevent water accumulation on the surface of the heat exchanger, enhance water dispersion, and reduce the risk of degradation, thereby improving overall performance and durability. The Indian Seasonal Energy Efficiency Ratio (ISEER) of the unit shall be as per Energy Conservation and Sustainable Building Code (ECSBC) 2024 as below and complete as per CPWD specification, connections, inter connections etc. as required. (For capacity <40 kW _r ISEER 6.4, Capacity > 40 and <70 ISEER 6.5, Capacity > 70 ISEER 6.6 for ECSBC+ Building) For Cooling or Heating or Both				
11.1.1	14 to 22 HP & Above	186	per HP	20385.00	3791610.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.2	Indoor Unit				
	Supply, Installation, Testing and Commissioning of following minimum capacity 4 way Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan /dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded/cordless remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement in auto mode. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor)				
11.2.1	1.2 TR 4-Way Cassette Type	1	each	38601.00	38601.00
11.2.2	2 TR 4-Way Cassette Type	4	each	39734.00	158936.00
11.2.3	2.4 TR 4-Way Cassette Type	11	each	40814.00	448954.00
11.2.4	2.6 TR 4-Way Cassette Type	11	each	40814.00	448954.00
11.2.5	3.6 TR 4-Way Cassette Type	8	each	44269.00	354152.00
11.2.6	4.1 TR 4-Way Cassette Type	3	each	45781.00	137343.00
11.3	Supply, Installation, Testing and Commissioning of following minimum capacity 4-way compact VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded/cordless remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor)				
11.3.1	1.2 TR 4-Way Compact Cassette Type	14.00	each	39950.00	559300.00
11.3.2	1.6 TR 4-Way Compact Cassette Type	11.00	each	39950.00	439450.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.5	Supply, Installation, Testing and Commissioning of following minimum capacity High wall type Indoor unit equipped with and comfort washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, outer cabinet, cord less remote control, drain pan, necessary accessories etc., suitable for operation on 230 V $\pm$ 10%, 50 Hz, single phase AC supply, complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor unit)				
11.5.1	0.8 TR	4.00	each	17276.00	69104.00
11.5.2	1 TR	1.00	each	17816.00	17816.00
11.5.3	1.2 TR	1.00	each	21595.00	21595.00
11.5.4	1.6 TR	1.00	each	22027.00	22027.00
11.5.5	2 TR	2.00	each	22674.00	45348.00
11.6	SITC of Center Remote Contoller comprising of high end touch screen having following features : schedule management , energy management, error check function, holiday setting etc. as required.	2.00	each	76198.00	152396.00
11.7	Supply, Installation, Testing and Commissioning of Y/T/Multi Joints. Joints shall be of same Original Equipment Manufacturer (OEM) make as of ODU's and IDUs.				
11.7.1	Indoor Units	65.00	each	4535.00	294775.00
11.7.2	Outdoor Multi joint	10.00	each	8098.00	80980.00
11.8	Supply & installation of control cum transmission wiring of 2 core x 1.5 sq.mm. armoured copper cable in between indoor and outdoor unit etc as required.	1200.00	meter	224.00	268800.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.9	Copper Refrigerant Piping				
	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastometric nitrile rubber tubular sleeves sections of 19 mm thick insulation as given below for Suction and Liquid lines, all accessories as per specifications etc. as required :				
11.9.1	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	78.00	meter	256.00	19968.00
11.9.2	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	198.00	meter	346.00	68508.00
11.9.3	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	128.00	meter	487.00	62336.00
11.9.4	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 19 mm thick insulation	158.00	meter	615.00	97170.00
11.9.5	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	98.00	meter	739.00	72422.00
11.9.6	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	28.00	meter	904.00	25312.00
11.9.7	25.4 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	20.00	meter	1068.00	21360.00
11.9.8	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	53.00	meter	1157.00	61321.00
11.9.9	31.8 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	56.00	meter	1222.00	68432.00
11.9.10	34.9 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	40.00	meter	1286.00	51440.00
11.9.11	38.1 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	57.00	meter	1322.00	75354.00
11.9.12	41.27 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	21.00	meter	1368.00	28728.00
11.10	Supplying and top up of refrigerant gas R-410A for existing New System I/c testing etc. as required	60.00	kg	710.00	42600.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.11	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with 2 Each. G.I. suspenders including base of suitable size G.I. Angle, G.I. bolts & nuts, Fastner etc. as required.				
11.11.1	150 mm width X 50 mm depth X 1.6 mm thickness	10.00	meter	803.00	8030.00
11.11.2	300 mm width X 50 mm depth X 1.6 mm thickness	60.00	meter	1062.00	63720.00
11.12	Supplying, laying, fixing, testing of Rigid PVC Pipes , duly insulated with 9 mm Thick Nitrile rubber pipe section, complete with all necessary fittings such as elbows, tees, reducers, serviceable 'P'traps. Etc and supports such as clamps etc complete as per required.				
11.12.1	Ø 25 mm	200.00	meter	143.00	28600.00
11.12.2	Ø 32 mm	170.00	meter	143.00	24310.00
11.12.3	Ø 40 mm	50.00	meter	206.00	10300.00
11.13	Supplying, laying, fixing, testing of Rigid PVC Pipes , duly pipe section, complete with all necessary fittings such as elbows, tees, reducers, serviceable 'P'traps. Etc and supports such as clamps etc complete as per required.				
11.13.1	Ø 100 mm	330.00	meter	673.00	222090.00
11.13.2	Ø 150 mm	10.00	meter	852.00	8520.00
11.13.3	Ø 200 mm	10.00	meter	1076.00	10760.00
11.14	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports, bends, transitions, reducers, end caps, collars etc as required complete in all respect in confirmation to IS : 655 and approved drawings and specifications of following sheet thickness complete as required.				
11.14.1	Thickness 0.63 mm sheet	150.00	sqm	1191.00	178650.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.15	Supply, Installation, Testing and Commissioning of circular/rectangular inline fans for exhaust / fresh air complete with sheet metal casing, direct driven centrifugal fan, motor with proper protection and inspection door, gravity louvers etc. as per the specifications. Fan should be suitable for operation on 220±6% Volts, 50Hz, Single Phase AC power supply as required. Inline fans shall be provided with speed regulators. Including canvass connection between Fan and duct & Exhaust air louver Inline fans shall be of following capacities:				
11.15.1	1000 CFM	2.00	each	18097.00	36194.00
11.15.2	500 CFM	2.00	each	13901.00	27802.00
11.15.3	200-300 CFM	7.00	each	10861.00	76027.00
11.15.4	400 CFM	1.00	each	12137.00	12137.00
11.16	Supplying of following sizes XLPE insulated. XLPE insulated and PVC sheathed Copper conductor armoured power cable as per IS 7098 (Part-1) 1988 of 1.1 KV grade etc. complete as required.				
11.16.1	4 X 6 sq.mm Copper Armoured Cable	250.00	meter	809.00	202250.00
11.16.2	4 X 10 sq.mm Copper Armoured Cable	100.00	meter	1315.00	131500.00
11.17	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE armoured power cable of 1.1 KV grade of following size on wall surface/cable tray as required.				
11.17.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	350.00	meter	64.00	22400.00
11.18	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit submain wiring / cable as required.	400.00	meter	50.00	20000.00
11.19	SITC of 4" flexible duct including connection etc. as required.	70.00	meter	423.00	29610.00
11.20	Supplying, installing and testing of cowl piece of fresh/ Exhaust air aluminum intake louvers with bird screen & without volume control damper complete as required.	7.00	each	4151.00	29057.00
11.21	SITC of Butterfly Dampers including connection etc. as required.	74.00	each	1153.00	85322.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
11.22	Supply , Installation, Testing and Commissioning of Air Cooled Hi Wall split type Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU) i/c drain pipe R-32/R-410/R 407 Green Refrigerant, wireless Remote control, suitable for working between 180-260V with low & high voltage cutoff and 50 hz ,1 phase AC supply capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotary compressor. The system shall be able to deliver 100% of the rated capacity upto 42 Degree Celsius. Min 5 year Original Equipment Manufacturer (OEM) warranty both compressor and Printed Circuit Board (PCB). Must comply : Electrical cable IS 694 or IS 9968 temperature sensing control IS /International Electro technical Commission (IEC) 60730, hermetic compressor IS 10617, heat exchanger IS 11329, capacitor IS 2993 and motor IS 12615. Complete as per CPWD specification and IS : 1391 Part II 2023. The system shall be able to operate up to 50 degree C (out door ambient temperature)				
	Inverter Type-Cooling Only				
11.22.1	1.0 TR with 5 Star BEE Rating	1.00	each	40580.00	40580.00
11.22.2	1.5 TR with 5 Star BEE Rating	1.00	each	43539.00	43539.00
11.23	Supply, installation, testing and commissioning of Plastic body Propellar fans with motor complete with bird screen & gravity louvers cable up to 5mt length in all respect & of following capacities i/c mounting arrangement etc complete as required.				
11.23.1	150-200 mm Dia	4.00	each	5277.00	21108.00
11.24	Supply , installation, testing and commissioning of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers in confirmation to SMACNA/IS and as per specifications complete etc. as required. with mounting arrangement, wooden/ steel/ aluminium frame work (if required), all accessories as per specifications and any other item required to make the system complete.	3.00	sqm	9623.00	28869.00
	TOTAL of SH-V (In Rs.)				94,06,467.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	SH-VI - SAFETY EQUIPMENT				
	Supply and installation of following items :The material shall be supplied with all required accessories in all respect				
12.1	Providing and fixing of 4.5Kg Carbon Dioxide type (Co2) fire extinguisher confirming to IS 15683 duly enamel painted fully charged, wheel release type valve, delivery hose horn, locking arrangement, 21B,C fire rating, operating temperature: 30 Deg C to +55 Deg C i/c wall mounting M.S. bracket etc complete as required.	8.00	each	8131.00	65048.00
12.2	Providing & fixing of powder Fire Extinguisher (stored Pressure type) capacity 6 kg duly ISI marked confirming to IS: 15683:2006, ISI marked ABC powder complete with squeeze grip release valve, discharge pipe, locking arrangement, pressure gauge, operation manual and bracket etc as required	8.00	each	2897.00	23176.00
	TOTAL SH-VI				88,224.00
	SH-VII - INTELLEAGENT ADDRESSABLE FIRE ALARM SYSTEM & PA SYSTEM				
13.1	Supplying, installation, testing and commissioning of microprocessor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices(including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5% V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless analog/digital integration voice with evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories. The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications.				
13.1.1	Two Loop Panel	1.00	each	250420.00	250420.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
13.2	Supplying, installation, testing & commissioning of repeater panel with 320 character/Touch screen LCD display with inbuilt reset,acknowledge and silence switches complete as required.	1.00	each	113734.00	113734.00
13.3	Supplying, installation, testing & commissioning of intelligent analog addressable photo thermal detector complete with mounting base complete as required. (Above/Below false ceiling)	105.00	each	3004.00	315420.00
13.4	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed temperature thermistor complete with base as required.	2.00	each	2866.00	5732.00
13.5	Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required.	3.00	each	3682.00	11046.00
13.6	Supplying, installation, testing & commissioning of addressable fire control module complete as required.	6.00	each	3156.00	18936.00
13.7	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	3.00	each	4063.00	12189.00
13.8	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	10.00	each	3434.00	34340.00
13.9	Supplying, installation, testing & commissioning of digital audio amplifier 75 Watt, 25V RMS operating at 240 Volt AC Supply complete as required.	2.00	each	152368.00	304736.00
13.10	Supplying, installation, testing & commissioning of 1.5/3/6W ceiling speaker complete as required	30.00	each	1025.00	30750.00
13.11	Supplying & laying of 2x1.5 sq.mm.fire alarm armoured cable , 600/1000V rated with annealed copper conductor having insulation, steel wire armouring & FRLS/HFFR outer sheath complete as required.	1000.00	meter	192.00	192000.00
13.12	Supplying, installation, testing & Commissioning of 6 zone, voice alarm controller with USB, MP3 player (including 6 zone button paging station) with seamless integration facility with main fire alarm panel for voice evacuation complete as required.	1.00	each	132115.00	132115.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
13.13	Supplying, installation, testing & Commissioning of Voice command key pad 6 zone micro phone assembly complete as required.	1.00	each	85450.00	85450.00
13.14	Supplying and making end termination with brass compression gland with copper lugs for following size of XLPE insulated and PVC sheathed / XLPE copper conductor cable of 1.1 KV grade as required.				
13.14.1	2 X 1.5 sq. mm	316.00	each	182.00	57512.00
13.15	Providing and fixing of photoluminescent signages of various matters/sizes in Aluminium sheet (1.2 mm) with super extra glow based AUTOGLO in-dark rigid sheet with high intensity luminous properties in a weather proof UV stabilized coated aluminium sheet with UV screen printed by imported inks. Thickness 1.2 mm (+/-10%) service temp. -40c to +120c, visible up to more than 24hrs in total dark fungistatic, non-radioactive, contain no lead or phosphorous, no health or environmental problem, non-flammable, fixed on wall/ suspended with SS chain link complete as reqd. (matters & size as approved by Engineer-in-charge).	3000.00	sq. inch	38.00	114000.00
13.16	Supply installation testing & commissioning of LED emergency double Sided exit signage with arrow, Ceiling hung sign type made up of extruded aluminium alloy/MS with epoxy polyester powder coating and acrylic sheet, hanging from ceiling through SS adjustable chain, indicator with light source 2-7W LED, Ni-Cd rechargeable battery, Emergency Backup of minimum 2 hours Confirms to IS 10322 IP 20 suitable for operation on 230 volts, 50 Hz, AC supply i/c connection etc. as required.	10.00	each	7720.00	77200.00
13.17	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required.	35.00	each	306.00	10710.00
13.18	Supplying, installation, testing & commissioning of fire fighter phone jack complete as required.	3.00	each	1689.00	5067.00
13.19	Supplying, installation, testing & commissioning of fire fighter telephone handset complete as required.	2.00	each	6016.00	12032.00
13.20	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required.				
13.20.1	speaker cable Two pair, 2-core, 1.5 sqmm	600.00	meter	97.00	58200.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	TOTAL of SH-VII (In Rs.)				18,41,589.00
	Sub Head - VIII (Kitchen equipments)				
14.1	Supplying, installation, testing and commissioning of minimum 30-32 L capacity convection microwave oven , ideal for baking, grilling, reheating, defrosting and cooking, having 101 auto cook menus, weight defrost, rotisserie, grill mode, auto reheat, delay start, keep warm, express cooking, steam clean, disinfect, deodorize, convection temperature range 40°C to 200°C, preheat, auto programs, sound on/off, ceramic cavity, child safety lock, touch key pad (membrane) control, touch key pad is sensitive to touch and easy to clean, complete with starter kit, warranty card, user manual, with 1-year warranty on microwave and 3 years on magnetron & cavity, including all necessary connections etc. complete.	1	each	16751.00	16751.00
14.2	Supply, Installation, Testing & Commissioning of Double Door Refrigerator of minimum 330L ,3 Star minimum, Convertible 5-in-1, Stabilizer free operation, Digital Inverter, Frost Free Double Door, WiFi Enabled Bespoke AI Refrigerator with 1 year comprehensive warranty and a 20 years warranty on the digital inverter compressor.	1	each	44219.00	44219.00
14.3	Supplying, installation, testing and commissioning of RB Hot, Cold and Normal Floor Standing Water Dispenser (Black) having hot, cold and normal water dispensing with cooling capacity of minimum 2.5 Ltr/hr, heating capacity of minimum 5 Ltr/hr, with refrigerated storage compartment of minimum 15 Ltr capacity, Refrigerant R134a constructed with long-lasting plastic front panel and SS304 inner body, complete with three faucets for dispensing hot, cold and normal water, including all accessories, complete as required, with 1 year comprehensive warranty and additional 1 year warranty on compressor.	4	each	10996.00	43984.00
14.4	Supplying, installation ,testing and commissioning of minimum 6L water purifier having nano pro filter technology with 10 stages of UV purification including RO+UV, 3-in-1 patented active copper technology with 2 year free warranty, 2 year filter life suitable for operating at 230 V, 50 Hz power supply i/c proper connection with incoming water supply point etc as required at site.	2	each	20647.00	41294.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
14.5	Supply, Installation, Testing and Commissioning of energy efficient filter less autoclean wall mounted electric kitchen chimney of stainless steel with canopy hood with BLDC motor having minimum suction capacity of 1425 cum/ hr and touch & motion sensor control and shall be operable at 230 V, 50 Hz AC supply complete with aluminium duct pipe of size upto 9 feet as required at site.	1	each	26278.00	26278.00
14.6	Supply, Installation, Testing and Commissioning of gas hob with supporting legs, suitable for placing on kitchen platform, 80 cm, Black, Single handed ignition (Battery operated/power operated) via control knobs, Preset for liquid gas (28 - 30/37 mbar), minimum 8 mm toughened glass with bevel edges and with 4 Each. brass burners, minimum burner specifications as 1*3.5 kw, 1*2.5 kw and 2*1.5 kw and with metallic knob, also the hob should come with Flame failure Device in all burners including flexible piping for gas connections, battery, cables etc.	1	each	29554.00	29554.00
14.7	Supplying and placing of custom fabricated stainless steel Kitchen Utility Trolley of 3 tier of size minimum 500 mm X 400 mm X 800 mm having rating capacity of Approx 175 - 200 kg with 4 noiseless and 360 degree rotating casters,built-in break locking function , anti collision design & soundproof cotton pads at botton of Each partition .	2.00	set	7038.00	14076.00
14.8	Supplying of 2000 Watt Jumbo grill sandwich maker of stainless steel with Non-Stick Coating Plates Opens to 180°, BPA & PTFE Free ,with an oil drip collector tray to drain excess butter and oil, and a slope adjust stand for better grilling angles & temperature control knob for precise cooking control and stainless steel top cover LED indication operable at 230 V, 50 Hz AC supply complete as required.	2.00	set	5329.00	10658.00
	Total SH-VIII				2,26,814.00
	Sub Head -IX (Access control system)				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
15.1	Supply, installation, testing & commissioning of Face Recognition Reader with Fingerprint Sensor, 7" Touch screen IPS colour LCD, CPU: 1.4 GHz Quad Core CPU and 1.8 GHz Dual Core, Memory: 16GB Flash and 2 GB RAM; Dual camera module: Infrared and Visual, support live face detection (Anti-spoofing), proximity recognition, Face Capacity: 50,000 (1:N), FBI PIV certified Fingerprint Sensor with Finger Capacity: 100,000 (1:N); Event text Log: 1,000,000; provide flexible combination authentication modes with face, finger and card, support EM/Mifare/DESFire card, Connectivity: Weigand/RS-485/TCP-IP; Inputs: 2 Each, Relay: 1 Each, Tamper Alarm, 24VDC, IP65, Operating Temp: -20°C ~ 50°C; CE, FCC, RoHS, REACH, WEEE certified, and as per specification suitable for mounting on metal surface/metal frames or wooden frames / wall or as required based on site conditions.	3.00	each	172906.00	518718.00
15.2	Supply, testing & commissioning of 125 KHz Proximity cards complete as per specification i/c all necessary accessories & peripheral items etc as required.	10.00	each	272.00	2720.00
15.3	Supply, Installation, Testing & Commissioning of Enterprise version Access Control Software Supporting Unlimited Users. Capable of integrating any number of card readers. Manage cardholders across multiple sites, MS SQL Based, Multiple Door modes: Lockout, Lockdown, PIN Only, Card+PIN, Card or PIN, Card Only etc as required.				
	The software suite shall comprise various integrated software modules that allow for the full integration and retrieval of transactions from the hardware, as well as alarm monitoring, reporting, and scheduling capabilities. Should also support web clients. Following features,				
	+ Zone-related Software Features				
	+ Supervisor card unlock				
	+ Card-related Software Features				
	+ Time-limited access				
	+ Seamless integration with CCTV System				
	+ PIN codes				
	+ Suspension of cards				
	+ Multiple card access				
	+ Time patterns (schedules)				
	+ Anti-pass back (APB) control				

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	+ Reporting including Tracking and Muster report with time stamping				
	+ First Card Rule (Activates the door time zone)				
	+ Two Card Rule-Supervisor card and regular card to allow access				
	+ Time zone card toggle for door locks				
	+ Manual override of system functions				
	+ Latching mode for door locks				
	+ LDAP based and Application logon users				
	+ Inbuild Guard Tour module				
	+ Dynamic floor plans and Photo-ID badging	1.00	each	203252.00	203252.00
15.4	Supply installation testing & commissioning of web based Time & Attendance software application supporting multiple sites, Multiple operator login with 3 operator partitioning as Super User/HR Admin/Normal Use. Various T&A reports such as Attendance details with IN-Out time and total Manhours, overtime, Leave Management, out duty, online leave application and approval as a minimum etc as required.	1.00	each	93157.00	93157.00
15.5	Supply, installation, testing & commissioning of Client Workstation with desktop as per following specifications: Intel® Core™ Intel Core i7-8700 or higher, minimum 3.2 GHz, OS - Genuine Microsoft Windows® 10 Enterprise 64-bit, RAM - 16GB, Hard Drives - 1 TB 7200RPM SATA3, Video Adaptor - Integrated Intel UHD graphics 630 supporting 2 Monitors over HDMI/VGA, Network Connection - 1 Gbit/sec or greater, Two(2) PCI-Express Expansion Slots 2/4 USB, CD/DVD ROM, SD Card Reader, USB -C slot , USB Keyboard and Mouse, UPS, associated cables etc complete as required	1.00	each	98043.00	98043.00
15.6	Electromagnetic locks Supplying, Installation, Testing and Commissioning of Electromagnetic locks (fail safe type) for following type of Doors suitable for operation on 12 V DC having holding force 600 lbs for Single Leaf Door and 1200lbs for Double leaf door with suitable feedback i/c connection complete etc. as required.				
15.6.1	Single leaf door	3.00	each	4831.00	14493.00
15.7	Supply, installation, testing and commissioning of Power Supply for lock (12VDC/3A) etc as required.	3.00	each	1704.00	5112.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
15.8	Supply, installation, testing and commissioning of Emergency Door Release or Break Glass Unit with feedback (Double Pole Double Throw), Key Resettable, Green Colour, suitable for Single Gang Box (Including surface mounted back boxes/Concealed GI back boxes) etc as required.	3.00	each	633.00	1899.00
15.9	Supply, installation, testing and commissioning of Magnetic Contact for Doors with all necessary accessories, civil, electrical works & peripheral items, as required.	3.00	each	1404.00	4212.00
15.10	Supply, installation, testing and commissioning of Push to Exit switch , Steel Body suitable for Single Gang Box (Including surface mounted back boxes/Concealed GI back boxes.) with all necessary accessories, civil, electrical works & peripheral items, as required.	3.00	each	745.00	2235.00
15.11	Supplying and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U' Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screws packet of 20 x 1 number, etc. complete as required.				
15.11.1	15U Rack	1.00	each	13330.00	13330.00
15.12	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diaMeter should be in the range of 6.1mm nominal with Operating Temperature Range : -5° to +60°C. Bending Radius : < 4 X Cable DiaMeter at -5°C ± 1°C and Pulling Force : 11.5Kg				
15.12.1	1 run of cable	70	meter	60.00	4200.00
15.13	Supplying and fixing of following sizes of medium class PVC conduit, alongwith accessories in surface/ recessed i/c cutting the wall and making good the same in case of recessed conduit as required.				
15.13.1	25 mm	300	meter	168.00	50400.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
15.14	Supplying and drawing following core Multi mode Fiber Optic Cable having corrugated steel armoring, lesser optimize 50/125 μ m with HDPE jacket, LSZH (Low smoke Zero Halogen), Tight-buffered or loose tube, maximum attenuation: < 3.5 dB/km at 850 nm, < 1.5 dB/km at 1300 nm, bandwidth > 2000 MHz-km at 850 nm, > 500 MHz-km at 1300 nm compliance and certifications: ISO/IEC 11801 Ed. 2.2, ANSI/TIA-568-C.3, ITU-T G.651.1 RoHS compliant. Multi Mode Fiber shall be Central-loose tube filled with Thixotropic jelly, duly following Standards: ISO 11801, IEC 60793-1/60794-1-2, ITU-T-REC G.652D and Telecordia GR20-core, High quality Electro Chromium Coated Corrugated Steel tape (ECCS) and HDPE- Sheath, Operating ambient Temperature should be – 5 0C to +50 0C and Storage Temperature should be – 5 0C to +50 0C, Maximum Attenuation $\pm$ 3.5 dB/km at Operational Wavelength 850 nm and $\pm$ 1.5 dB / km at Operational Wavelength 1300 nm . type of fiber should be 50/125 / G.652D & Refractive Index should be 1.483/1.478, The value for Mode-filed,Cladding DiaMeter $50 \pm 2.5 \mu$ m and $125 \pm 1 \mu$ m correspondingly i/c splicing & marking etc complete as required.				
15.14.1	6 Core Multi Mode Optical Fiber Cable	25	meter	87.00	2175.00
15.15	SITC of 8 core 0.75 sq.mm. FR Copper Multistranded flexible cable (between card reader and Access Controller individually) with PVC insulation and sheathing, technical specifications as per IS 694-2010 in the existing conduit / on wall surface complete as required with all necessary accessories and terminations.	45	meter	191.00	8595.00
15.16	SITC of 2 core 0.75 sq.mm. FR Copper Multistranded flexible cable (between Magnetic Contact/Lock/Buzzer/REX/EDR and Access Controller individually) with PVC insulation and sheathing, technical specifications as per IS 694-2010 in the existing conduit / on wall surface complete as required with all necessary accessories and terminations.	40	meter	68.00	2720.00
15.17	SITC of 3 core 1.5 sq.mm. FR Copper Shielded Multistranded flexible cable for Power with PVC insulation and sheathing technical specifications as per IS 694-2010 in the existing conduit / on wall surface complete as required with all necessary accessories and terminations.	55	meter	109.00	5995.00

Sr. No.	Description of Items	Qty	Unit	Rate	Amount
	Total of 15 (In Rs.)				10,31,256.00
	GRAND TOTAL (SH-I to SH-IX)				32929020.00

Assistant Engineer (E)
O/o CE (Mumbai)-II, CPWD
Mumbai

Executive Engineer (P)
O/o CE (Mumbai)-II, CPWD
Mumbai