

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	a) INCOMER:					
	i) 1 No. MCCB Panels each having following					
	200 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	i) 1 Nos. MCCB as per following details/specifications:					
	200 Amp 35 KA TP+N/L MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	ii) 2 Nos. MCCB as per following details/specifications:					
	100 Amp 35 KA TP+N/L MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	UPS INPUT PANEL as mentioned above	Set	1			
5.29	UPS OUTGOING Panel (ICU ,PRE & POST OT- 30 KVA)					
	a) INCOMER:					
	i) 2 No. MCCB Panels each having following					
	100 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	i) 1 Nos. MCCB as per following details/specifications:					
	200 Amp 35 KA TP+N/L MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	UPS OUTGOING Panel as mentioned above	Set	1			
5.30	ICU , Pre & Post OT Panel (30 KVA)					
	a) INCOMER:					
	i) 2 No. MCCB Panels each having following					
	200 Amp 415 volts, 35 KA, Microprocessor, TP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	i) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	LCU, PRE & POST OFF Panel as mentioned above	Set	1			
	CHAMBA_NEW OPD					
5.31	MAIN MV PANEL Emergency					
	a) INCOMER:					
	i) 1 No. MCCB Panels each having following					
	100 Amp 415 volts, 33 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	630 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	i) 2 Nos. MCCB as per following details/specifications:					
	100 Amp 33 KA TP-NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Amperes Meter of suitable range with suitable set of C.T.s and A.S.S.					
	ii) 3 Nos. MCCB as per following details/specifications:					
	75 Amp 33 KA TP-NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Amperes Meter of suitable range with suitable set of C.T.s and A.S.S.					
	iii) 3 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	MV PANEL Emergency (Ground Floor Plan as mentioned above)	Set	1			
5.32	MV PANEL Emergency (First, Second, Third, Fourth, Fifth Plan)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/specifications:					
	63 Amp 415 volts, 33 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	iii) 3 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	MV PANEL Emergency (First, Second, Third, Fourth, Fifth Plan) as mentioned above	Set	5			
5.33	MV PANEL NORMAL (Ground, First, Second, Third, Fourth, Fifth Floor Plan)					
	a) INCOMER:					
	i) 1 No. MCCB Panels each having following					
	100 Amp 415 volts, 33 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS:					
	630 Amp TPN Aluminium busbars					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	c) OUTGOING:					
	i) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	MV PANEL NORMAL (Ground, First, Second, Third, Fourth, Fifth Floor) as mentioned above	Set	6			
5.34	LIFT Panel (OPD Block)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications:					
	100 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R, Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	i) 4 Nos. MCCB as per following details/ specifications:					
	63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Lift Panel Hospital (Ground Floor) as mentioned above	Set	1			
5.35	Computer Panel Section -1 (Ground Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications:					
	160 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R, Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	i) 10 Nos. MCCB as per following details/ specifications:					
	63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	ii) 4 no. 40 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.					
	Main Computer Panel (Ground Floor) as mentioned above	Set	1			
5.36	Sub Computer Panel (First, Second, Third, Fourth, Fifth, Sixth & Seventh Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications:					
	63 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R, Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS:					
	300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	ii) 9 no. 40 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.					
	Sub Computer Panel (First, Second, Third, Fourth, Fifth, Sixth & Seventh Floor) as mentioned above	Set	12			
	Removal Existing OPD CHAMBA					
5.37	MAIN MV Panel Emergency (Fourth Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/specifications: 125 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.T's.					
	b) BUSBARS: 300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	i) 4 Nos. MCCB as per following details/specifications: 63 Amp 35 KA TPN MCCB with thermal magnetic release having variable current settings of O/L, S/C protection, release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	ii) 6 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	Main MV Panel Emergency (Fourth Floor) as mentioned above	Set	1			
5.38	MV FIFTH FLOOR- Emergency					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/specifications: 63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.T's.					
	b) BUSBARS: 300 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	ii) 9 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	MV FIFTH FLOOR- Emergency as mentioned above	Set	1			
5.39	MAIN MV Panel Normal (Fourth Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB Panels each having following: 120 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & Inbuilt E/F protection release. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.T's.					
	b) BUSBARS: 630 Amp TPN Aluminium busbars.					
	c) OUTGOING:					
	i) 1 Nos. MCCB as per following details/specifications: 160 Amp 35 KA TPN MCCB with thermal magnetic release having variable current settings of O/L, S/C protection, release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	i) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. MV Panel Normal (Fourth Floor) as mentioned above	Set	1			
5.40	MV Panel (Fifth Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications: 160 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCCB & ON, OFF, TRIP Indication. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS: 300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	ii) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. MV Panel (Fifth Floor) as mentioned above	Set	1			
5.41	Renovation Existing Hospital SIXTH Level CHAMBA MAIN MV Panel Emergency (SIXTH Floor)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications: 125 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCCB & ON, OFF, TRIP Indication. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS: 300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	i) 2 Nos. MCCB as per following details/ specifications: 63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Amperes Meters of suitable range with suitable set of CTs and ASS.					
	ii) 8 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. Main MV Panel Emergency (SIXTH Floor) as mentioned above	Set	1			
5.42	MV FIFTH FLOOR Emergency (SIXTH FLOOR - Part B)					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications: 85 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Ts.					
	b) BUSBARS: 300 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	ii) 8 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. MV FIFTH FLOOR Emergency (SIXTH FLOOR - Part B) as mentioned above	Set	1			
5.43	MAIN MV Panel Normal (SIXTH Floor)					
	a) INCOMER:					
	i) 1 No. MCCB Panels each having following					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	100 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of OIL, S/C & inbuilt E/F protection release. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS: 630 Amp TPN Aluminium busbar.					
	c) OUTGOING:					
	i) 1 Nos. MCCB as per following details/ specifications: 160 Amp 35 KA TP+NLCB with thermal magnetic release having variable current settings of OIL, S/C protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Amperes Meter of suitable range with suitable set of C.T.s and ASS.					
	ii) 12 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. MV Panel Normal (SIXTH Floor) as mentioned above	Set	1			
5.44	MV Panel (Fifth Floor) Part B					
	a) INCOMER:					
	i) 1 Nos. MCCB as per following details/ specifications: 125 Amp 415 volts, .35 KA FP MCCB with thermal magnetic release having variable current settings of OIL, S/C protection and E/F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.T.s.					
	b) BUSBARS: 300 Amp TPN Aluminium busbar.					
	c) OUTGOING:					
	iii) 12 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. MV Panel (Fifth Floor) Part B as mentioned above	Set	1			
	TOTAL SUB HEAD 5: MV PANEL AS MENTIONED ABOVE					
	SUB HEAD 6: MCB DISTRIBUTION BOARDS.					
6.00	MCB DISTRIBUTION BOARD					
6.01	Supplying & fixing following way, three pole and neutral sheet steel, MCB distribution board, 415 volts on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, dim bar, detachable gland plate, interconnections, phosphatized and powder coated including earthing connection bolt etc. as per technical specifications and as required, (but without MCB & RCCB).					
	i) 4 way (8+12), Double door	Each	98			
	ii) 6 way (8+18) Double door	Each	78			
	iii) 8 way (8+24), Double door	Each	168			
6.02	Supplying & fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, dim bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required, (but without MCB & RCCB).					
	i) 8 way Double door	Each	20			
	ii) 12 way Double door	Each	98			
6.03	Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, B series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.					
	i) Single pole	Each	7948			
	ii) Triple pole & neutral	Each	30			
6.04	Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB) in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i) 25 Amps	Each	51			
	ii) 32 Amps	Each	44			
	iii) 40 Amps	Each	85			
	iv) 63 Amps	Each	196			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)	
6.05	Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.						
	i	25 Amps	Each	51			
	ii	32 Amps	Each	44			
	iii	40 Amps	Each	85			
	iv	63 Amps	Each	196			
6.06	Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
	i	32 amps	Each	20			
	ii	40 amp	Each	88			
6.07	Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.						
	i	32 amps	Each	20			
	ii	40 amp	Each	88			
6.08	Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.						
			Each	820			
	TOTAL SUB HEAD 6: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE						
7.00	SUBHEAD 7: UPS SYSTEM						
7.01	UPS 40 KVA (OTS) CHAMBA						
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 40 KVA at 0.8 power factor at out put with over all efficiency of minimum 92% at full load, True Online Double Conversion UPS using PWM IGBT technology, 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output, fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:						
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module						
	(b) IGBT Rectifier input for achieving THDi<5% and input power factor of greater than 0.99						
	(c) 100% rated external isolation transformer of H-class DeltaStar at the UPS output, after static bypass including cabling between UPS and transformer						
	(d) 100% rated Inbuilt static switch						
	(e) 100% rated Inbuilt Maintenance Bypass						
	(g) 100% rated moulded case circuit breaker having thermal, magnetic and automatic UV trip mechanisms						
	(h) RS 485 port for BMS connectivity						
	(i) Supplying and installing Built-in suitable air-circulating fan.						
	input phase overvoltage protection to be provided as standard, UPS should shift on battery and provide alarm.						
	(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.						
	(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required						
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with built-in Technical Protections like Short Circuit, Overload, High Low Voltage cutoff, protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- Short Circuit Overload Over temperature Bypassing of particular load if reqd.						
	UPS 40 KVA (OTS) CHAMBA AS MENTIONED ABOVE.						
		Set	1				
7.02	UPS 30 KVA (ICU, Pre & Post) CHAMBA						
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 30 KVA at 0.8 power factor at out put with over all efficiency of minimum 92% at full load, True Online Double Conversion UPS using PWM IGBT technology, 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output, fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:						
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module						
	(b) IGBT Rectifier input for achieving THDi<5% and input power factor of greater than 0.99						
	(c) 100% rated external isolation transformer of H-class DeltaStar at the UPS output, after static bypass including cabling between UPS and transformer						
	(d) 100% rated Inbuilt static switch						
	(e) 100% rated Inbuilt Maintenance Bypass						

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	(g) 100% rated moulded case circuit breaker having 1 thermal, magnetic and automatic UV trip mechanics					
	(h) RS 485 port for BMS connectivity					
	(j) Supplying and installing Built-in suitable air-circulating fan.					
	input phase reversal protection to be provided as standard. UPS should shift on battery and provide alarm.					
	(k) Supply, installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.					
	(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required					
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with built-in Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like- Short Circuit Overload Over temperature Bypassing of particular load if reqd.					
	UPS 30 KVA. (ICUs , Pre & Post)- CHAMBA AS MENTIONED ABOVE.	Set	1			
	TOTAL SUBHEAD 7: UPS SYSTEMS					
	SUB HEAD 8: WIRING					
8.00	WIRING					
8.01	i Wiring for light point/exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/multi strand, in steel conduit (including supplying & recess laying of MS conduit and accessories) including the following and complete as required.					
	ii Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc.					
	iii Supplying and Fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points					
	iv Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.					
	Note : i) Unless otherwise specified all the conduiting work to be done in recess					
	Point wiring as mentioned above Group B	Point	2938			
	Point wiring as mentioned above Group C	Point	7470			
8.02	i Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required.					
	ii Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.					
	Note : i) Unless otherwise specified all the conduiting work to be done in recess					
	Wiring for twin control light points as mentioned above	Point	360			
8.03	Wiring for Submain/ circuit wiring with following size of PVC insulated FRLS copper conductor single core/multi strand cable in recessed steel conduit (including supply & laying of recessed conduit) as required.					
	i 2X1.5 Sqmm with 1 No. 1.5 sqmm PVC FRLS insulated, copper conductor for earthing.	Metre	17760			
	ii 2X2.5 Sqmm with 1 No. 2.5 sqmm PVC FRLS insulated, copper conductor for earthing.	Metre	32115			
	iii 2X4 Sqmm with 1 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	Metre	49950			
	iv 2X6 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	4920			
	v 2X10 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	3100			
	vi 2X4 Sqmm with 1 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	Metre	2400			
	vii 3X6 Sqmm with 2 Nos. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1960			
	viii 3X6 Sqmm with 2 Nos. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	2450			
	ix 3X10 Sqmm with 2 Nos. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1950			
	x 4X16 Sqmm with 2 nos 6 sq mm PVC insulated FRLS copper conductor for earthing.	Metre	4200			
8.04	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable and 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel /PVC conduit including dismantling as required.	Point	800			
8.05	Rewiring for twin control light points with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable and 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel /PVC conduit including dismantling as required.	Point	40			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
8.06	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel / PVC conduit as required					
	i 141.5 Sq.mm	Metre	400			
	ii 217.2 Sq.mm	Metre	400			
	iii 245 Sq.mm	Metre	200			
	iv 246 Sq.mm	Metre	200			
8.07	Supply and fixing of following medium class PVC FRLS conduit along with accessories in surface /recess including cutting the wall and making good the same in case of recessed conduit as required.					
	i 32mm	Meter	400			
	ii 25mm	Meter	600			
	iii 20mm	Meter	600			
8.08	Supplying and fixing suitable Modular GI box on surface or in recess including providing and fixing 3 pin 5/6 amps, modular socket outlet with shutters and 5/6 amps, modular type switch with indicator type, base plate, modular cover plate, connections etc. and all civil works complete as required.	Each	965			
8.09	Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 6 pin 15/16 A, modular socket outlet with shutters and 15/16 A modular switch with indicator, base plate, modular cover plate, connections, etc. and all civil works complete as required.	Each	1708			
8.10	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps, modular socket outlet with shutters and one no. 10 amps, modular type switch, base plate, modular cover plate, connections etc. and all civil works complete as required. (For computer Points)	Each	1159			
8.11	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps, & two 6 pin 15/16 amp modular socket outlet with shutters and one no. 25 amps, modular switch, base plate, modular cover plate, connections etc. and all civil works complete as required. (For Comb-1/ Bed Point)	Each	372			
8.12	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps, & one 6 pin 15/16 amp modular socket outlet with shutters and one no. 20 amps, modular switch, base plate, modular cover plate, connections etc. and all civil works complete as required. (For Comb-2/Consultant point)	Each	1250			
8.13	Supplying and fixing suitable Modular metal box surface or in recess including providing and fixing two nos 3 pin 5/6 amps, modular socket outlet with shutters and one no. 5 amps, modular type switch, base plate, modular cover plate, connections etc. and all civil works complete as required. (COMBO POINT-3/ TV Point)	Each	219			
8.14	Supplying and fixing suitable module modular GI box on surface or in recess including providing and fixing 3 pin 20 A, modular socket outlet with shutters and 20 AMP SP MCB, base plate, modular cover plate, etc. on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	88			
8.15	Supply and fixing following 20/32 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20/32 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	240			
8.16	Supply and fixing following 63/100 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 63/100 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	6			
8.17	Supplying, providing & fixing cordless musical bell with batteries etc of approved make complete as required.	Each	209			
8.18	Supply and fixing following 4P MCB, 415 volts, 35 KA (Ics), Four Pole with thermal magnetic release having variable current setting (0.8 to 1.0 In) with Extended rotary operating mechanism including door interlocking with defeat feature and padlock facility in a sheet steel enclosure on surface complete with all accessories including , connections, testing and commissioning etc. as required.					
	i 83 Amp	Each	10			
	ii 125 Amp	Each				
	iii 250 Amp	Each	1			
	iv 320Amp	Each	2			
8.19	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	494			
8.20	Supply, installation, Testing & Commissioning of 360 degree Ceiling recess mountable 360 degree multifunction sensor that combines motion detection (PIR), Infrared remote control reception (IR) and ambient light level detection (PE) into one device.	Nos.	30			
8.21	Supply, installation, Testing & Commissioning of Standalone Ceiling Mounted Motion PIR sensor 360 degree.	Nos.	90			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
8.22	Supply, Installation, Testing & Commissioning of Standalone Wall Mounted Motion PIR sensor 90 degree.	No.	60			
	TOTAL SUBHEAD 8: WIRING AS MENTIONED ABOVE					
	SUB HEAD 9: LIGHT FIXTURE AND FANS					
9.00	LIGHT FIXTURES AND FANS					
9.01	Supply of following LED light fixture with high efficiency with Driver, tubes/lamps, reflector, diffuser, body/hoisting holder etc. complete with all fixing accessories as required.					
i	1 x 18 W LED box type fluorescent light fixture (Philips LED 31084/31 Shellline ,6500K PSE OD GR with minimum system lumen 1600 or approved equivalent from list of Makes)(1206w)	Each	1082			
ii	1 x 20 W LED box type fluorescent light fixture (Philips BN108C LED 20S PSU CDL WH including Mounting Accessories, with minimum system lumen 2100 or approved equivalent from list of Makes)(136w/ 136hw)	Each	300			
iii	2 x 20 W LED box type fluorescent light fixture (Philips BN108C LED 40S PSU CDL WH including Mounting Accessories, with minimum system lumen 2100 or approved equivalent from list of Makes)(236w/ 236hw)	Each	80			
iv	LED Recessed flush mounted light fixture (Full Glow (L200mm), Philips RC380B G2 LED-3SS-6500 L120W30 PSU OD or Crompton LCTLR-40-CDL as per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, ICU)	Each	695			
v	LED recessed flush mounted light fixture (Full Glow (600mm), Philips RC380B G2 LED3SS-6500 PSU OD WH or Crompton LCTLRN-36-FO-CDL per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, ICU)	Each	595			
vi	LED recessed flush mounted light fixture (Serevo Philips RC698B LED-30S-6500 PSE W30L 120 D8 WH Size 600 x 600 mm/ 1200 mm as per requirement, with minimum system lumen 3000 or approved equivalent from list of Makes)(236RM02)	Each	485			
vii	LED Surface mounted light fixture (Philips SP824P LED 29S-5000 GR OD or Crompton LCTLS-40-CDL as per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(236SM01)	Each	2294			
viii	1 x 20 W LED box type fluorescent light fixture (LED ASTRA, Philips BN 150 W LED 20S-6500 PSE OD GR with minimum system lumen 2000 or approved equivalent from list of Makes)(1206w)	Each				
ix	LED recessed flush mounted light fixture (AURICA Crompton LCPH-36-CDL/PL Size 600 x 600 mm/ 1200 mm as per requirement, with minimum system lumen 3000 or approved equivalent from list of Makes)	Each				
x	1 x 10 W Bulk Head light fixture (Philips WT202 W LED 6S CW PSU S1 PC or approved equivalent from list of Makes)(BH)	Each	121			
xi	1 x 10 W Mirror top with diffuser in 2ft variant (Crompton Greaves LINNET # LCL-10-CDL or approved equivalent from list of Makes)(w/holder)	Each	500			
xii	Surface mounted Batten holder (Plastic) with 9 watt LED	Each	120			
xiii	1 x 15 W LED Surface mounted down light fixture (Philips DN170C LED 10S-6500 PSU WH or approved equivalent from list of Makes)(DL1)	Each	846			
xiv	LED Recessed flush mounted down light fixture (Philips DN194B LED 1SS -6500 PSU WH or Crompton LCDD-18-CDL/TL/WW or approved equivalent from list of Makes)(DL0)	Each	50			
xv	1 x 18 W LED Surface mounted down light fixture (Crompton Greaves Pearl Round LCD SPL-R-18-CDL or approved equivalent from list of Makes)	Each	400			
xvi	1x37.5 W LED Surface/Recessed flush mounted light fixture to be used as night lamp ceiling mounted (NLCM)	Each	50			
xvii	1x37.5 W LED Recessed flush mounted light fixture to be used as night lamp wall mounted (NLWM)	Each	80			
xviii	1 x 10 W wall Bracket (Philips LED-1 x 10 W 4561717 Vase or approved equivalent from list of Makes)(WB)	Each	132			
xix	1X36 LED Surface mounted down light fixture (Crompton Greaves Pensile LCSA1-36-CDLS or approved equivalent) (DL2)	Each				
xx	1X50 LED Recess mounted down light fixture (Crompton Greaves Prakhar LCDNR-50-CDL/WW or approved equivalent)	Each	70			
9.02	Supply of following ceiling fans (BEE 5 Star Rated) complete with double ball bearing motor, blades, downrod, canopy, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required.					
i	1400 mm Sweep	Each	50			
ii	1200 mm Sweep	Each	2036			
iii	900mm Sweep	Each	40			
9.03	Supply of 1380 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	217			
9.04	Supply of 1280 RPM, 250 mm (Crompton Greaves Brisk Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	150			
9.05	Supply of 400 mm sweep, Crompton greaves model high flow 16" wall mounted fan complete with double ball bearing motor, blades, capacitor etc. suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	6			
9.06	Installation, testing and commissioning of wall bracket ceiling fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connections etc. as required.	Each	7900			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
9.07	Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator (Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	2126			
9.09	Installation, testing and commissioning of exhaust fan up to 400 mm sweep in the opening, including making the hole to suit the size of the above fan including - fixing of louvers/ shutters with frame making good the damages etc. as required.	Each	367			
9.10	Installation, testing and commissioning of wall mounted fan up to 400 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	6			
9.11	Supply, installation, testing and Commissioning of LED Type Aviation light Philips XGP400 14LED-K2/RD240V or approved equivalent including its wiring.	Each	18			
	TOTAL SUBHEAD 9: LIGHT FIXTURE & FANS AS MENTIONED ABOVE					
	SUB HEAD 10: TELEPHONE SYSTEM					
10.00	TELEPHONE SYSTEM					
10.01	Supplying drawing, connecting and testing of 0.5mm dia annealed copper conductor PVC insulated PVC sheathed telephone Wires/cables in Existing M.S/ PVC conduit or a racks as required.					
	i	1 pair Telephone cable (0.5 mm)	Meter	13000		
10.02	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.					
	i	20 mm	Metre	6500		
	ii	25 mm	Metre	3250		
10.03	Supply, fixing, connecting and testing of telephone modular sockets modular plate anodised MS box and blanking plate in surface / recessed including connection etc as required.					
	i	Telephone socket outlet (RJ-11 telephone Jack Single with Shutter)	Each	614		
	ii	Telephone socket outlet (RJ- 11 telephone Jack double with Shutter)	Each	36		
10.04	Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.					
	i	200 Pair	Each	2		
	ii	100 Pair	Each	4		
	iii	20 Pair	Each	10		
	iv	10 Pair	Each	40		
10.05	Supplying and drawing of following pairs 0.5mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddles including termination of cables at both sides in Krone Tag Block etc. complete as required.					
	i	20 Pair	Metre	454		
	ii	10 Pair	Metre	774		
10.06	Supplying and drawing of following pairs 0.5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddles etc. including termination of cables in both sides at krone tag block complete as required.					
	i	200 pair	Metre	460		
	ii	100 Pair	Metre	500		
10.07	DIGITAL EPABX SYSTEM (COMMUNICATION SERVER) - CHAMBA HOSPITAL SITE					
	A	Supply, installation, testing & commissioning of 32 bit microprocessor based, fully digital, 100% non blocking, PCM TDM, true ISDN & PRI Line, and IP ready digital EPABX with distributed architecture for power supply cards, as per specifications with following configuration:				
		IP PBX 600 Extension Expandable type				
		IP User - 10 users				
		Configured Fax				
		Analog P&T Lines- 16 (Expandable upto 12 Lines)				
		ISDN PRI Line (30 Channels) - 2 nos with CLIP Facility				
		24 Extension Digital Card : 1no				
		SUBSCRIBER INTERFACE:				
		Voice Mail system Consisting of Voice mail Boxes for all Users - Auto attended system with greeting messages PC for Attending voice mail system				
		Redundant Lan Port and Wan Port-2				
		Redundant Call Processor				
		Redundant Power Supply				
		Full Software Licences & Support				
		In-built Music on Hold				
		Remote maintenance.				
		Ethernet port for LAN connectivity and System Management				
		Support for Voice over IP (VoIP)				
		Day/Night service				
		8 party conference Facility				
		Speed Dial				

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	Support for GFC Connectivity Support for Wi-Fi based wireless extensions System Documentation on CD-ROM Hot Standby Duplication of all common control card without call disconnection. IP Based operator Console with PC - 1 Nos. Should support IP Telephony and should be able to integrate other EPBAX System on IP					
	DIGITAL EPBAX SYSTEM AS MENTIONED ABOVE	Set	1			
B	Flat Cum Boost Charger (FCBC) for Above EPBAX System 48 V/125 Amp including SMS Batteries with 2 hr Battery Back Up)	Set	1			
10.08	Supply, installation, testing and commissioning of Main Distribution frame Exchanger side - Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			
10.09	Supply, installation, testing and commissioning of Field Side Distribution frame Exchanger side - Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			
10.07	DIGITAL EPBAX SYSTEM (COMMUNICATION SERVER) CHAMBA - TEACHING SITE					
A	Supply, installation, testing and commissioning of 32 bit microprocessor based, fully digital, 100% non blocking, PCM, TDM, true ISDN & PRI Line and IP ready digital EPBAX with distributed architecture for power supply cards, as per specifications with following configuration: IP PBX 256 Extensions Expandable type IP User - 10 users Configured For- Analog P&T Lines- 16 (Expandable upto 12 Lines) ISDN PRI Line (30 Channels)- 2 nos with CLIP Facility 24 Extension Digital Card : No SUBSCRIBER INTERFACE: Voice Mail system Consisting of Voice mail Boxes for all Users , Auto attended system with greeting messages PC for attending voice mail system Redundant Lan Port and Wan Port-2 Redundant Call Processor Redundant Power Supply Full Software Licenses & Support In-bill Menu on Hold Remote maintenance Ethernet port for LAN connectivity and System Management Support for Voice over IP (VoIP) Support for Voice over IP (VoIP) Day/Night service 3 party conference Facility Speed Dial Support for GFC Connectivity Support for Wi-Fi based wireless extensions System Documentation on CD-ROM Hot Standby Duplication of all common control card without call disconnection. IP Based operator Console with PC - 1 Nos. Should support IP Telephony and should be able to integrate other EPBAX System on IP					
	DIGITAL EPBAX SYSTEM AS MENTIONED ABOVE	Set	1			
B	Flat Cum Boost Charger (FCBC) for Above EPBAX System 48 V/125 Amp including SMS Batteries with 2 hr Battery Back Up)	Set	1			
10.08	Supply, installation, testing and commissioning of Main Distribution frame Exchanger side - Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			
10.09	Supply, installation, testing and commissioning of Field Side Distribution frame Exchanger side - Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			
10.10	Supply, installation, testing and commissioning of IP Digital Phone having following features IP Handset Console Phone Full Colour VGA Display with 4096 different colours Full alphabetic keyboard Key-based navigation Hands free operation Best in Class loudspeaker for speakerphone operation; also includes microphones Jack for headset expansion Compatible with PC applications Bluetooth connectivity for the ultimate in integration 2 Ethernet ports Downloadable admin software Eight Personalized Ring Patterns. Either desk or wall mountable. DIGITAL IP PHONES AS MENTIONED ABOVE	Set	20			
10.11	D 24 port Layer 2 Switch 10/100/1000 Gbps for IP phone	Set	2			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
E	Supply, installation, testing and commissioning of Digital Phone having following features: (Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSSCC/Client. Adjustable graphical display Resolution 65K x 128 pixels Size 90x38 mm Socket for headset 40 Programmable keys XXV contextual keys, 2 personal keys,LED Navigator keys 4 directions Alphabetic keyboard (Dial by name) Feature keys Like: Message + LED, Redial, End Key, Volume +/-, Mute with LED, Help, Handsfree with LED					
	Digital Phone as mentioned above	Set	15			
F	Supply of Analog phones having following features:(Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSSCC/Client. HSKRTMPC Compatible Caller-Id 16-Digit LCD single display 50 Incoming Memory 5 Outgoing Memory Real Time Clock with Year, Date and Month display Conversation Time Display (Approx.) 9 Step LCD Contrast Adjustable 16-Digit Redial Memory Auto Fiber Local Area Code up to 9-digit Real time & Date in Idle Mode					
	Analog phones as mentioned above	Set	100			
G	Supply of Analog phones Without display having following features: Pulse or tone Dialing 3-repository Keys, 10 Speed-Dialing Number, Last Number redial, Manual Pause, Adjustable volume etc (Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSSCC/Client.	Set	450			
	TOTAL SUBHEAD 10: TELEPHONE SYSTEM AS MENTIONED ABOVE					
	SUBHEAD 11: CONDUITING FOR COMPUTER SYSTEM					
11.00	CONDUITING FOR COMPUTER SYSTEM.					
11.01	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ceiling including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
	i 40 mm dia	Metre	17490			
	ii 25 mm dia	Metre	5830			
11.02	Supplying and fixing two module modular plate in recess flush mounted with clear acrylic cover (suitable for RJ-45 computer socket) with GI box complete as required.	Each	1166			
	TOTAL SUBHEAD: 11 CONDUITING FOR COMPUTER SYSTEM AS MENTIONED ABOVE					
	SUB HEAD 12: CONDUITING FOR TV OUTLETS					
12.00	CONDUITING FOR TV OUTLETS					
12.01	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ceiling including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
	i 40 mm dia	Metre	3780			
	ii 25 mm dia	Metre	630			
12.02	Supplying and fixing 2 module modular metal box in recess flush mounted with clear acrylic cover with modular cover plate including fixing. 1 no. coaxial TV outlet connection and all accessories complete as required	Each	126			
12.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine braided copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	5040			
	TOTAL SUB HEAD 12: CONDUITING FOR TV OUTLETS AS MENTIONED ABOVE					
	SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM					
13.00	ADDRESSABLE FIRE ALARM SYSTEM					
13.01	Supply, installation, testing and commissioning of microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer port etc; complete as per technical specifications and as per the requirement of Local Fire Authority and as required.					
	i 1 Loop	Nos.	2			
	ii 4 Loop	Nos.	1			
	iii 6 Loop	Nos.	2			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
13.02	Supply, installation, testing and commissioning of Networkable & Microprocessor based 640 - characters LCD/ Touch Screen LCD Display Network Repeater panel. The LCD shall display all events/ detectors, devices status of complete systems in the networked. The repeater shall be equipped with Mounting options etc. (UL Approved).	Nos.	2			
13.02	Supply, installation, testing and commissioning of Automatic Analog addressable Photo - Thermal multicriteria detector with mounting Base, alarm LED. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved)	Nos.	460			
13.03	Supply, installation, testing and commissioning of Automatic Analog addressable Photoelectric smoke detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	930			
13.04	Supply, installation, testing and commissioning of Automatic Analog addressable Fixed Temperature cum rate of Rise type Heat detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	90			
13.05	Supply, installation, testing and commissioning of Automatic Analog addressable Duct Detector with Duct Housing and Duct probe tubes complete with Photoelectric Smoke Detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	12			
13.06	Supply, installation, testing and commissioning of Automatic Addressable control module for AHU & Static Pressurization fan. The Module shall have automatic Electronic addressing feature & each of these shall be equipped with fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	12			
13.07	Supply, installation, testing and commissioning of Automatic Addressable Monitor module for Flow Switch Monitoring etc. The Module shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	12			
13.08	Supply, installation, testing and commissioning of Dual LED Response indicator for indicating the activation of the Remotely located Detector.	Nos.	490			
13.09	Supply, installation, testing and commissioning of Addressable Manual call Station. The Call Point shall have automatic Electronic/ dip Switch addressing feature, complete with the Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	62			
13.10	Supply, installation, testing and commissioning of Addressable electronic Sounder. The Sounder shall have automatic Electronic/ dip switch addressing feature, complete with the Mounting Box and the hardware etc. as required. The Sounders shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	62			
13.11	Supply, installation, testing and commissioning of Addressable electronic Sounder with Optical Beacon. The unit shall have automatic Electronic addressing/ dip switch feature, complete with the Mounting Box and the hardware etc. as required. The unit shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	19			
13.12	Supply, installation, testing and commissioning of Full duplex Fire Fighter's talk Back system with operator command centre and sufficient no. of point. The full duplex emergency communication system shall be able to display customized address of the location from which the Call is being made to the Fire Fighter's command Centre.	Nos.	3			
13.13	Supply, installation, testing and commissioning of Addressable Fire Fighter's Telephone Jack for full duplex emergency communication with the Fire Fighter's command Centre.	Nos.	18			
13.14	Supply, installation, testing and commissioning of 2 way communication Fire Fighter's Handset complete with suitable leads for insertion.	Nos.	18			
13.15	Supply and laying of following size of MS Conduit pipe in recess including all accessories MS pull/ junction boxes, GI fish wire of 6 SWG, Fixing hardware etc., including cutting, chasing the walls/ floor and plastering the chased portion and making good the damages etc., complete as required.	Meter	10200			
		Meter	400			
13.16	Supply and drawing of 2C x 1.5 Sq.mm. Sheathed armoured flexible copper Conductor (FRLS) cable in existing M. S. Conduit. Complete with termination and testing as per requirement.	Meter	11800			
13.17	Supply and drawing of 4C x 1.5 Sq.mm. armoured flexible copper Conductor, Copper braided shielding and overall Sheathed FRLS cable in existing MS Conduit. Complete with termination and testing as per requirement.	Meter	550			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	CONVENTIONAL (MICROPROCESSOR BASED SYSTEM)					
13.18	Supply, Installation, Testing & Commissioning of Main fire alarm panel of 6 Zone microcontroller based with its own fire detection zone interface card for initiating and indicating devices, power supply & Battery Charger, with LED for fault / isolate / fire alarm condition, short, open condition The batteries shall be sufficient for 30 Mins. in alarm condition and 48 Mins in normal condition.	Nos.	4			
13.19	Supply, installation, testing & commissioning of MANUAL CALL POINT complete with UPVC box duly painted in red colour including connections etc.	Nos.	26			
13.20	Supply, Installation, testing & commissioning of Hostror Cum Speaker with 24 volt circuit, complete as required	Nos.	26			
13.21	Supply, Installation, testing & commissioning of Optical smoke detector with mounting base complete as required	Nos.	5			
	TOTAL SUB HEAD 13: ADDRESSABLE FIRE ALARM SYSTEM as mentioned above					
	SUB HEAD 14: PUBLIC ADDRESS SYSTEM					
14.00	PUBLIC ADDRESS SYSTEM					
14.01	Supply, Installation, Testing and Commissioning of IP based PA Controller capable of handling 8 zones, Digital audio controller complying to IEC EN 60849 with built-in high and low pass filters and parametric equalizer. With in built 50W digital amplifier and 8 Outputs Led Indication of each zone independent output control button and volume control, Network input, BGM input, local emergency Mic input, can work with One Extra stand by amplifier, when the inbuilt amplifier come out faulty the standby amplifier takes over automatically. Support 24 V DC input interface.	Set	2			
14.02	Supply, Installation, Testing and Commissioning of Power Amplifier Power Amplifier SCPAS0270V, 100 V & 4.16 ohm, 2 channel power amplifier - Inbuilt resistant and robust - Integrated electronic protection against thermal overload and short circuit. - Temperature controlled fans, airflow from front to rear. - Method of control: Class D - Power output of amplifier: 1 x 500W sin./100V - Output range: 50 Hz -- 22kHz: 0/-0.5 dB - Signal to noise ratio (not valuated): > 105 dB - Channel separation: > 75 dB - THD (total harmonic distortion): < 0.08% - Input level at max. output voltage: 6 dbu - The amplifier has to be switched into Stand-by Mode in case of power loss by the control centre.	Set	3			
14.03	Supply, Installation, Testing and Commissioning of DIGITAL CALL STATION 8 ZONE Fully digital call station with electret microphone (cardioid-characteristics) on flexible 300 mm swan neck complete with wideband loudspeaker for monitoring, pre-listen and intercom operation for the networked PA system. - Permanent audible supervision of the microphone and its capsule in accordance to EN 60849.	Set	2			
14.04	Supply, Installation, Testing & Commissioning of Music source CD/MP3 Player 1 U table top and rack mount clearly visible LCD display, micro computer and touch button operation complete as required.	Each	15			
14.05	Supply, Installation, Testing & Commissioning of 6 W, transformer tapping 100 volt line multi tap, driver impedance 8 ohm, SPL @ 1m, 1 Watt.(Ceiling speaker)	Each	155			
14.06	Supply, Installation, Testing and Commissioning of Wall mountable type column type Speaker 6 watt, SPL 90 dB, Freq. response 200-15000 Hz, rated input voltage 100 Volts & rated impedance 1667 Ohms.	Each	20			
14.07	Supply, Installation, Testing & Commissioning of Music source CD/MP3 Player 1 U table top and rack mount clearly visible LCD display, micro computer and touch button operation complete as required.	Each	2			
14.08	Supply and drawing of 2 x 1.5 sqmm ATC Copper conductor cable/ wire in existing MS Conduit, Complete with termination and testing as per requirement.	Metre	3600			
14.09	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required	Metre	24000			
14.10	Supply, installation, testing and commissioning of 19" Equipment Rack with power coated finish with front lockable door with MS Framed translucent Acrylic material, 2 Nos. of fans for heat exhaust, Top & Bottom entry knock outs, back side lockable Door, inbuilt MCB, Power Points, raceways and partitions, one no. sliding Tray etc. complete as required	Each	2			
	TOTAL SUB HEAD 14: PUBLIC ADDRESS SYSTEM as mentioned above					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	SUB HEAD 15: CCTV SURVEILLANCE SYSTEM					
15.00	CCTV SURVEILLANCE SYSTEM					
15.01	Supply, Installation, Testing and Commissioning of Day/night fixed dome with a discreet, dust and IK rated vandal-resistant indoor casing. Varifocal 2.8-10 mm P-Iris lens, remote focus and zoom. Multiple, individually configurable H.264 and Motion JPEG streams, max HDTV 720p or 1 MP resolution at 30 fps, WDR more than 70dB, Video motion detection and active tampering alarm. Memory card slot for optional local video storage. Power over Ethernet. Included mounting bracket for wall/ceiling or junction boxes.	Nos.	5			
15.02	Supply, Installation, Testing and Commissioning of Ultra-compact, indoor fixed mini dome with dust and vandal-resistant casing for easy mounting on wall or ceiling. Fixed lens. Multiple, individually configurable H.264 and Motion JPEG streams, max HDTV 720p or 1 MP resolution at 30 fps, MicroSD/microSDHC memory card slot for optional local video storage. Video motion detection and active tampering alarm. Comes with a 2 m (6.6 ft.) network cable and is powered using Power over Ethernet.	Nos.	30			
15.03	Supply, Installation, Testing and Commissioning of Intel Xeon Processor ES-2609 v3, 1.90 GHz, 15MB Cache, Memory: 8GB (2 x 4GB), storage: 16TB usable after RAID, HDD speed of 7200 rpm, 64MB Cache, SATA 6Gb/s interface, RAID 5 Hotpluggable, RAID controller: PERC H730, 1GB NV, Graphics: Matrix 200 e8, recording Shell, support recording up to 64 video channels with a total recording rate up to 256 Mbit per second, software Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pan/Tilt, Zoom, Thermal, Camera, playback upto 64s or frame by frame upto 25 cameras synchronized playback, power supply Dual, Hot-plug, Redundant Power Supply, 495 W, AXIS S1048, connector 4 x USB 2.0, 2 x VGA, Serial port (DB9), 4 x Ethernet (RJ45), 2 x Power inlet complete as required.	Nos.	1			
15.04	Supply, Installation, Testing and Commissioning of Client system with processor Intel i5-4570S 2.90 GHz, memory 4 GB DDR3 (3x 1.5GB), RAID 5 Hotpluggable, RAID controller: PERC H730, 1GB NV, Graphics: Matrix 200 e8, recording Shell, SATA 6Gb/s interface, graphics AMD Radeon R5 A240 1 GB DDR3 with DVD-RW NETWORK CARD Integrated, Intel I217LM Ethernet LAN 10/100/1000 Mbit Live VIDEO stream Minimum Support for resolutions upto 5 Mpixel, upto 15 fps or 3MP upto 20 fps or 2MP upto 25 fps, client software Compatible for all cameras, encoders, PTZ Camera, Thermal Camera, 6 x USB 2.0, 4 x USB 3.0, 3 x Display Port, 1 x VGA, 1 x Dual Link DVI-I, AXIS S1900, Network connector, Line-in/out connectors, Computer mouse and keyboard connectors with two display monitor output with Mouse, Keyboard USB Type complete as required.	Nos.	1			
15.05	CCTV COLOR MONITOR Supply, installation, testing & commissioning of 32" Flat LED Color Monitors.	Nos.	2			
15.06	ETHERNET SWITCHES					
i	Supply, installation, testing & commissioning of PoE Layer II Managed Ethernet switch; 16 port RJ45 10 base 100 T with 2 Fibre Ports.	Nos.	8			
ii	Supply, installation & testing of Layer III Managed Ethernet switch; 24 port RJ45 10 base 1000T with 2-Fibre Ports.	Nos.	1			
15.07	19 INCH RACK MOUNT					
i	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 42 U with 4 cooling fans on top and bottom at control room.	Nos.	1			
ii	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 6 U for Layer 2 switches on field.	Nos.	8			
iii	Any other network equipment like Patch Chords, Patch Panels, Jack Panels, Splicing and LDU required for successful operation.	Lot	1			
15.08	Supply, laying & testing of Cat 5/6 UTP cable with all termination crimping etc.	Metre	2000			
15.09	Supply, laying & testing of 2 x 1.5 sqmm Power Cable for powering all the SWITCHES.	Metre	200			
15.10	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
i	25 mm dia	Metre	1800			
15.11	Supply, installation, testing and commissioning of 2 kVA UPS with batteries 30minutes backup etc. complete in ready to use condition	SET	1			
	TOTAL SUB HEAD 15: CCTV SURVEILLANCE SYSTEM as mentioned above					
	SUB HEAD 16: NURSE CALL SYSTEM					
16.00	NURSE CALL SYSTEM					
16.01	Supply, Installation, Testing and Commissioning of Microprocessor controller Nurses station with terminal monitor with in built power supply, with charger enclosed in a powder coated cabinet. Having with Reset, alarm/ buzzer, Call acknowledgement with battery back up, battery charger complete system as per technical specifications and as per required of following suitable configuration: omni call complete as required					
i	40 Way	Nos.				
ii	24 Way	Nos.	6			
iii	16 Way	Nos.	4			
iii	8Way	Nos.	2			
16.02	Supply, Installation, Testing & Commissioning of Bed Call Push Button with LED indicators and Flexible Cord with button, Call Reset, Call Indication, station for each Bed omni call complete as required.	Nos.	200			
16.03	Supply, Installation, Testing & Commissioning of Toilet Call Push Button with LED indication and flexible cord with button, Call Reset, Call Indication, station for each Bed omni call complete as required.	Nos.	50			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
16.04	Supply, Installation, Testing & Commissioning of LED Indicators Module at Outside of each ward omnical complete as required.	Nos	36			
16.05	Supply, laying and testing of 2C X 0.5 Sqmm diameter multistrand copper conductor PVC cable in existing MS/ PVC Conduit on recessed/ surface with all accessories complete as required	Meter	3500			
16.06	Supply, laying and testing of 2C X 0.5 Sqmm diameter multistrand copper conductor PVC cable in existing MS/ PVC Conduit on recessed/ surface with all accessories complete as required	Meter	1000			
16.07	Supply and fixing of following sizes of Medium Class FRSL PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
i	25 mm dia	Meter	500			
16.08	Supply and fixing of following sizes of PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
ii	25 mm dia	Meter	3000			
TOTAL SUB HEAD 16: NURSE CALL SYSTEM AS MENTIONED ABOVE						
SUBHEAD 17: INVERTER						
17.01	Supply, installation, testing and commissioning of 2 KVA inverter with batteries 30minutes backup etc. complete and ready to use condition. Make Sukam, Microtek & Luminous	SET	1			
TOTAL SUB HEAD 17: INVERTER AS MENTIONED ABOVE						
SUB HEAD 18: LIFTS						
18.00	LIFTS					
18.01	Design, manufacture, supply, installation, testing and commissioning of following 20 passenger cum hospital (1260 kg) lift, serving different floors in the lift shaft including machine room at the top. The lift should be as per detailed specification/ drawing enclosed as required and as under: <ul style="list-style-type: none"> - Speed : 1 MPS - Travel: As per architectural drawing. - Controller: A.C. variable voltage & variable frequency - Automatic rescue device complete with dry maintenance free batteries as required. - Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant. - 415 V, 3 phase, 50 Hz, 4 wire system - Type of doors: a) Car : Power operated, telescopic opening, horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift landing doors shall have a fire resistance of one hour. - All push buttons will have Brail also. - Car Enclosure : Scratch proof stainless steel finish. - A hand rail guide not less than 600 mm long at 900 mm above floor level. - Mirror of suitable size to be fixed inside the lift car. - Voice announcement system in the car to announce the position of the elevator in the hallway as the car passes or stops at a floor served by the elevator. - Telephone with minimum two connections one at operator's room and other at guard/ security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car. - Toe guard, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided. 					
	Floors : G+7 (9 stops & 9 openings)	Each	3			
	Floors : G+5 (6 stops & 6 openings)	Each	1			
Passenger cum hospital Lift as mentioned above						
18.02	Supply, Fixing, Testing and Commissioning of Dumb Waiter of Capacity 100kgs. Complete as required. Fabrication in MS finish <ul style="list-style-type: none"> - Speed : 0.5 MPS - Floors : G+7 (3 stops & 3 openings) (at First, Sixth & Seventh Floor) 					
Dumb Waiter as mentioned above						
18.03	Design, manufacture, supply, installation, testing and commissioning of following 13 passenger (884 kg) lift, serving different floors in the lift shaft including machine room at top. Lift should be Gear less with speed of 1 MPS The lift should be as per detailed specification/ drawing enclosed as required and as under: <ul style="list-style-type: none"> - Travel: As per architectural drawing. - Speed : 1 MPS - Controller: A.C. variable voltage & variable frequency - Automatic rescue device complete with dry maintenance free batteries as required. - Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant. - 415 V, 3 phase, 50 Hz, 4 wire system - Type of doors: a) Car : Power operated, Centre opening, horizontal sliding stainless steel scratch proof finish (b) Landing doors: Stainless steel scratch proof finish. Lift landing doors shall have a fire resistance of one hour. - Car Enclosure : Scratch proof finish stainless steel 					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	<ul style="list-style-type: none"> All push buttons will have Brail also. A hand rail guide not less than 600 mm long at 900 mm above floor level. Mirror of suitable size to be fixed inside the lift car. 					
	<ul style="list-style-type: none"> Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator. Telephone with minimum two connections one at operator's room and other at guard/security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car. IR curtain on full height, two phase freeman's drive control/ switch and potential free contacts etc to be provided. 					
	Floors : G+6, (7 stops & 7 openings)	Each	2			
	Floors : G+6, (8 stops & 8 openings)	Each	2			
18.03	<p>Design, manufacture, supply, installation, testing and commissioning of following 10 passenger (680 kg) lift, serving different floors in the lift shaft including machine room at top. Lift should be Gear less with speed of 1 MPS. The lift should be as per detailed specification/ drawing enclosed as required and as under:</p> <ul style="list-style-type: none"> Travel: As per architectural drawing. Speed : 1 MPS Controller: A.C. variable voltage & variable frequency Automatic rescue device complete with dry maintenance free batteries as required. Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant. 415 V, 3 phase, 50 Hz, 4 wire system Type of doors: a) Car : Power operated, Centre opening, horizontal sliding stainless steel scratch proof finish (b) Landing doors: Stainless steel scratch proof finish. Lift landing doors shall have a fire resistance of one hour. Car Enclosure: Scratch proof finish stainless steel All push buttons will have Brail also. A hand rail guide not less than 600 mm long at 900 mm above floor level. Mirror of suitable size to be fixed inside the lift car. Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator. Telephone with minimum two connections one at operator's room and other at guard/security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car. IR curtain on full height, two phase freeman's drive control/ switch and potential free contacts etc to be provided. 					
	Floors : G+6, (7 stops & 7 openings)	Each	4			
	Floors : G+5, (6 stops & 6 openings)	Each	1			
18.04	<p>Design, manufacture, supply, installation, testing and commissioning of goods lift of 1500 Kg, serving different floors in the existing lift shaft including lift well pressurization. The lift should be as per detailed specification/ drawing enclosed as required and as under:</p> <ul style="list-style-type: none"> Speed : 0.5 MPS Travel: As per architectural drawing. Controller: A.C. variable voltage & variable frequency Automatic rescue device complete with dry maintenance free batteries as required. All push buttons will have Brail also. Operation: Microprocessor based single automatic push button/ simplex selective collective/with / without attendant. 415 V, 3 phase, 50 Hz, 4 wire system Type of doors: a) Car : Power operated, central opening horizontal sliding M.S finish (b) Landing doors: M.S finish. Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator. IR curtain on full height, freeman's switch and potential free contacts etc to be provided in the lift. 					
	Floors : G+5 (6 stops & 6 openings)	Each	1			
	Floors : 3A-2 +1-G+6, (10 stops & 10 openings)	Each				
18.05	<p>Design, manufacture, supply, installation, testing and commissioning of following 8 passenger (544 kg) lift, serving different floors in the lift shaft including machine room at top. Lift should be Gear less with speed of 1 MPS. The lift should be as per detailed specification/ drawing enclosed as required and as under:</p> <ul style="list-style-type: none"> Travel: As per architectural drawing. Speed : 1 MPS Controller: A.C. variable voltage & variable frequency Automatic rescue device complete with dry maintenance free batteries as required. Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant. 415 V, 3 phase, 50 Hz, 4 wire system Type of doors: a) Car : Power operated, Centre opening, horizontal sliding stainless steel scratch proof finish (b) Landing doors: Stainless steel scratch proof finish. Lift landing doors shall have a fire resistance of one hour. 					

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	Car Enclosure: Scratch proof stainless steel finish					
	All push buttons will have Brail also.					
	A hand rail guide not less than 600 mm long at 900 mm above floor level.					
	Mirror of suitable size to be fixed inside the lift car.					
	Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.					
	Telephone with minimum two connections one at operator's room and other at guard/security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car.					
	16 curtain on full height, two phase freeman's drive control switch and potential free contacts etc to be provided.					
1	Doors : 4x5, (6 steps & 6 openings)	Each	2			
	TOTAL SUB HEAD 18. LIFTS AS MENTIONED ABOVE.					
	SUB HEAD 19. CABLES					
19.00	LIFT CABLES					
19.01	Supply of following sizes of 1.1 KV grade multicore aluminium conductor PVC sheathed armoured XLPE cable as per IS 7098.					
i	3.5 Core 25 Sqmm.	Metre	1600			
ii	3.5 Core 35 Sqmm.	Metre	200			
iii	3.5 Core 50 Sqmm.	Metre	1450			
iv	3.5 Core 70 Sqmm.	Metre	720			
v	3.5 Core 95 Sqmm.	Metre	1820			
vi	3.5 Core 120 Sqmm.	Metre	700			
vii	3.5 Core 150 Sqmm.	Metre	300			
viii	3.5 Core 185Sqmm.	Metre	1040			
ix	3.5 Core 240 Sqmm.	Metre	400			
x	3.5 Core 300 Sqmm.	Metre	7000			
xi	3.5 Core 400 Sqmm.	Metre	7000			
xii	4 Core 16 Sq mm	Metre	900			
xiii	4 Core 108sq mm	Metre	300			
xiv	4 Core 6 Sq mm	Metre	300			
xv	3 Core 6 Sqmm.	Metre	200			
xvi	3 Core 4 Sqmm.	Metre	200			
xvii	2 Core 10 Sq mm	Metre	2000			
xviii	2 Core 16 Sq mm	Metre	1600			
19.02	Laying of one number PVC insulated and PVC sheathed power cable 1.1KV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required					
i	Up to 35 Sq mm	Metre	4770			
ii	Above 35 Sq mm and upto 95 Sq mm	Metre	1659			
iii	Above 95 Sq mm and up to 185 Sq mm	Metre	1974			
iv	Above 185 Sq mm and up to 400 Sq mm	Metre	6328			
19.03	Laying of one number PVC insulated and PVC sheathed power cable 1.1KV grade direct in the existing RCC/Frame/Stone/metal pipe as required					
i	Up to 35 Sq mm	Metre	1065			
ii	Above 35 Sq mm and upto 95 Sq mm	Metre	350			
iii	Above 95 Sq mm and up to 185 Sq mm	Metre	425			
iv	Above 185 Sq mm and up to 400 Sq mm	Metre	1358			
19.04	Laying of one number PVC insulated and PVC sheathed power cable 1.1KV grade on surface or on existing cable tray complete as required.					
i	Up to 35 Sq mm	Metre	1065			
ii	Above 35 Sq mm and upto 95 Sq mm	Metre	356			
iii	Above 95 Sq mm and up to 185 Sq mm	Metre	425			
iv	Above 185 Sq mm and up to 400 Sq mm	Metre	1358			
19.05	Supplying and making end termination with suitable size Aluminium lugs including double compression glands of following sizes of 1.1 KV grade multicore aluminium conductor PVC insulated and PVC sheathed					
i	3.5 Core 25 Sqmm.	Each	120			
ii	3.5 Core 35 Sqmm.	Each	30			
iii	3.5 Core 50 Sqmm.	Each	70			
iv	3.5 Core 70 Sqmm.	Each	70			
v	3.5 Core 95 Sqmm.	Each	70			
vi	3.5 Core 120 Sqmm.	Each	50			
vii	3.5 Core 150 Sqmm.	Each	50			
viii	3.5 Core 185Sqmm.	Each	40			
ix	3.5 Core 240 Sqmm.	Each	20			
x	3.5 Core 300 Sqmm.	Each	170			
xi	3.5 Core 400 Sqmm.	Each	30			
xii	4 Core 16 Sq mm	Each	90			
xiii	4 Core 108sq mm	Each	50			
xiv	4 Core 6 Sq mm	Each	50			
xv	3 Core 6 Sqmm.	Each	40			
xvi	3 Core 4 Sqmm.	Each	40			
xvii	2 Core 10 Sq mm	Each	40			
xviii	2 Core 16 Sq mm	Each	90			
xviiii	2 Core 10 Sq mm	Each	90			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
19.06	Supply and laying of Flexible Industrial cable, Copper Conductor, FR PVC insulated 1100 volts conforming to IS 694/1990 or amended/updated in flexible MS conduit / Pipe, Complete with termination and testing as per requirement.					
	i 4 Sqmm	Metre	100			
	ii 6 Sqmm	Metre	100			
	iii 10 Sqmm	Metre	100			
	iv 16 Sqmm	Metre	50			
	v 25 Sqmm	Metre	50			
	vi 50 Sqmm	Metre	50			
	TOTAL SUBHEAD 19: LT CABLES AS MENTIONED ABOVE					
	SUBHEAD 20: EARTHING					
20.00	EARTHING					
20.01	Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number, CPRI tested copper bonded steel electrode of minimum 25 mm dia. (as per IEC 62561-2) With a minimum coating thickness of 250 microns and length of 3 meters, 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode, SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories, excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	20			
20.02	Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number, CPRI tested copper bonded steel electrode of minimum 19 mm dia (as per IEC 62561-2) With a minimum coating thickness of 250 microns and length of 3 meters, 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode, SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories, excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	28			
20.03	Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number UL Listed CPRI tested copper bonded steel electrode of minimum 13 mm dia. (as per IEC 62561-2) With a minimum coating thickness of 250 microns and length of 3 meters, 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode, SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories, excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	84			
20.04	Supply and installation of one number earth pit with advance maintenance free earthing system consisting of 1250 mm long copper bonded steel electrode of minimum 13 mm dia. tested as per IEC 62561-2. Minimum copper coating thickness on Rod is 100 microns, 3 kg/Electrode of earth enhancing compound tested as per IEC 62561-7 fill the 75-100mm augered hole surrounding to the electrode; it consist the following item: copper Alloy clamp suitable, Poly Propylene Heavy duty Pit cover including all accessories, excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	8			
20.05	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc as required.	Metre	400			
20.06	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	2000			
20.07	Supplying and laying 50mmX6mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc as required.	Metre	200			
20.08	Providing and fixing 50mmX6mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	400			
20.09	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	300			
20.10	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc as required.	Metre	150			
20.11	Supplying and laying 50mmX6mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc as required.	Metre	100			
20.12	Providing and fixing 50mmX6mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	300			
20.13	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required	Metre	600			
20.14	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	800			
20.15	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	600			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
	TOTAL SUBHEAD 20: EARTHING AS MENTIONED ABOVE					
21.00	SUBHEAD 21: LIGHTNING PROTECTION					
	LIGHTNING PROTECTION					
21.01	Supply and installation of one number earth pit with of advance maintenance free Earthing System consisting of one Number UL Listed CPRI tested copper bonded steel electrode of minimum 13 mm dia. (as per IEC62561-2.) With a minimum coating thickness of 250 microns and length of 3 meters. 25 kg/Electrode of earth enhancing compound tested as per IEC-62561-7. Fill the 100mm augered hole surrounding to the electrode. SS Unoversl Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	42			
21.02	Providing and fixing of lightning conductor final, made of 25mm. dia. 300mm. long GI tube, having single prong at top, with 85 mm. dia. 6 mm. thick GI base plate including holes etc. complete as required.	Each	42			
21.03	Providing and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For horizontal runs)	Metre	2800			
21.04	Providing and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For vertical runs)	Metre	2000			
21.05	Providing and fixing testing joint, made of 20mmX3mm thick GI strip, 125 mm. long, with 4 no.'s of GI bolts, nuts, check nuts, bar shackles, and spring washers etc. complete as required.	Each	42			
21.06	Providing and laying GI tape, 32 mm X 6 mm thick, from test joint upto earth electrode directly in ground as required.	Metre	840			
	TOTAL SUBHEAD 21: LIGHTNING PROTECTION AS MENTIONED ABOVE					
	SUBHEAD 22: SOLAR PHOTOVOLTAIC POWER GENERATION					
22.00	SOLAR PHOTOVOLTAIC POWER GENERATION					
22.01	Supply, installation, testing and commissioning of grid interactive roof top solar photovoltaic power generation system including solar modules, module mounting structure, grid interactive solar inverter, data logger with temperature and irradiance sensor, AC distribution board, multi data meter, cables, contacts, earing kit, GI strips (25 x 5 mm), vertical air terminal and installation kit etc. complete in ready to use condition and as per technical specifications.					
i	10 KWp	Set	2			
ii	Extra for providing space frame for above 10KWp solar system.	Set	2			
	TOTAL SUB HEAD 22: SOLAR PHOTOVOLTAIC POWER GENERATION AS MENTIONED ABOVE					
	SUBHEAD 23: OUT DOOR LIGHTING					
23.00	OUT DOOR LIGHTING					
23.01	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items:					
i	90 Mtrs. high swaged steel tubular pole with arm length around 1.3 Metre, the construction of the pole shall be as per IS:2713 - 1980 410 SP-30 with base plate 450 x 450 x 6 mm complete as per requirement with two coats of spray paint of approved shade.					
ii	90 watts LED street light fixture in die cast aluminum body with 90 watts LED lamp complete with control gear, cover etc. similar to Compton Greaves LSTN-90-CDL-A or approved equivalent including its wiring with 2X2.5 sq.mm. PVC insulated, FRLS copper conductor and 1.5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required.					
iii	Suitable size 32 A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 6A DP MCB complete as required - 1 Set					
iv	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
v	Providing foundation including excavation, shuttering, alignment of poles, casting etc. including lean concrete at the bottom as per CPWD/BIS specifications.					
vi	The above installations shall be completed as CPWD specifications and as required					
a.	Steel Tubular Poles (9M) Single Arm as mentioned above	Set	50			
b.	Steel Tubular Poles (9M) same as above but for Double Arm as mentioned above	Set	20			
23.02	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required:					
i	1 m high (3.5m above ground) 80mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6 mm and provision for mounting junction box etc. - 1 set.					
ii	1 x 40 LED Post top lantern with 40W LED lamp (Compton Greaves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box.					
iii	Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.					
iv	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
v	Providing 400 x 400 x 1000 mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom					
	Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	40			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
23.03	Supply, installation, testing and commissioning of Post top lanterns 1 x 40 Watts LED Post top lantern with 40 Watt LED lamp (Crompton Greaves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sqmm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box.	set	12			
23.04	Supply, installation, testing and commissioning of bollard lamps 1 x 10 Watts LED Light Fixture (Crompton Greaves LBL51-10-CDI (LARA) or equivalent) with control box - 1 set.	Each	50			
23.05	ROAD LIGHTING PANEL Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected MV cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, MV danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required. 1 Set of timer switch & 100A TP contactor with metral link (for street lights control)					
A	INCOMER: 100 Amps,415 volts, TP+N-L, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings. R, Y & B phase indicating lamp (LED type) with 2A control SP MCB. ON, OFF, TRIP indication (LED Type) Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
B	BUSBARS: 300 Amp TPN Aluminium busbars					
C	OUTGOING: 1 30 Nos. 16 Amp 415 volt, DP MCB					
23.06	ROAD LIGHTING PANEL AS MENTIONED ABOVE Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number, CPRI tested copper bonded steel electrode of minimum 19 mm dia (as per IE C62561-2) With a minimum coating thickness of 250 microns and length of 3 meters, 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode. SS Universal Clamp of Size 175X30X3 mm for terminal Connection including Poly Propylene Heavy duty Pt cover including all accessories. excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	6			
23.07	Providing and fixing 6 SWG dia G.L wire on surface or in recess for loop earthing as required.	Metre	500			
24.00	TOTAL SUB HEAD 23: OUTDOOR LIGHTING AS MENTIONED ABOVE SUBHEAD 24: VIDEO PROJECTION & AUDIO SYSTEM FOR Lecture Halls VIDEO PROJECTION SYSTEM					
24.01	Supply, installation, testing and commissioning of 5000 ANSI lumens high brightness,WUXGA resolution (1280x800),Aspect Ratio 16:10 Multimedia Projector Full HD with VGA, HDMI, video inputs VPLCH375 Make- Sony / Hitachi/ Panasonic	Nos.	4			
24.02	Supply, installation, testing and commissioning of high gain matte white projection screen motorised with remote control unit for easy access in classroom/lecture theater size 12 x 8 ft. make - Imported , Liberty/ draper/dalite	Nos.	4			
24.03	Supply, installation, testing and commissioning of 2 in 2 out HDMI splitter Make- Reputed, Bestnet/MX/Kramer	No.	4			
24.04	Supply, installation, testing and commissioning of HDMI Cable 15 meter Make- Reputed Bestnet/MX/KRAMER	No.	4			
24.05	Supply, installation, testing and commissioning of LAN extender HDMI over LAN Make- Reputed,Bestnet/ MX/ Kramer	No.	4			
24.06	Supply, laying & testing of VGA cable 15 meter Make - Reputed Bestnet/MX/ Kramer	Nos.	8			
24.07	Supply, installation, testing and commissioning of Projector ceiling mount kit for Hanging projector MAKE Customized	Nos.	4			
24.08	Supply, installation, testing and commissioning of projector to PC connection with USB remote Make- Sony Hitachi/ Panasonic	Nos.	4			
24.09	Supply, installation, testing and commissioning of patch boxes, patch cables, connectors etc complete as required	Lot	2			
24.10	AUDIO SYSTEM Supply, installation, testing and commissioning of 8" Loudspeaker : 55W, 20Hz - 10KHz, SPL : Nominal : Max SPL : 118dB SPL or more, Wideband Coverage(H X V) 90 X 50 degree or better, It should have a Axial Sensitivity of >90dB; with a Peak Power handling of >650 W.ZX11-90B It should come with a mount bracket & 4-pole phono/cx connector. Approved make:EV,Martin Audio, Renkus Heinz	Nos	16			

S.No.	Description.	Unit.	Quantity	Rate in Figures (in Rs.)	Rate in Words	Amount in Figures (Rs.)
24.11	Supply, installation, testing and commissioning of Powered Mixer ideal for installs with inbuilt Class D amplifier, Max. midband output power, 1 kHz, THD = 1%, dual channel into 4 Ω, 2 x 450 W into 8 Ω, 2 x 270 W, with 5 mic /line inputs also capable of Direct-Drive option for 100V speaker lines. Frequency response, -3 dB, ref. 1 kHz. Any input to any Mixer output 15-22000 Hz Crosstalk, 1 kHz Amplifier Ch1/Ch2 < -85 dB.5 MIC/LINE input channels with compressor / limiter and talk-over function. PMS/2 have 3 Stereo inputs including Jack, RCA and USB connectors. onboard player for MP3 or WAV audio files, high quality effects section with 32 editable presets, 3 Master outputs with 7-band EQ each and flexible signal routing options, delay line for Master-B (150 msec / 50m), Auxiliaries (FX, AUX) 1 Post, 1 Pre -input impedances MIC 2 kΩ CD 10 kΩ All other inputs > 15 kΩ, headphones control, LPN speaker processing, comprehensive protection package, optional rack mount kit. Approved make:EV, Martin Audio, Renkus Heinz	Nos	4			
24.12	Supply, installation, testing and commissioning of Handheld Wireless Mic with Cardioid polar pattern for transmitter. Dynamic microphone with Neodymium magnet, Receiver frequency response 80Hz-18kHz. Receiver RF sensitivity < 1.0 μV. Receiver Image rejection > 55dB. Receiver Dynamic range > 95dB and receiver having 32 channels possible. Receiver S/N ratio > 100dB. A distortion < 1%. Transmitter sensitivity - 3.2 mV/Pa, modulation: +/- 40kHz	Nos	8			
24.13	Supply, installation, testing and commissioning of Wireless Lapel Mic with Cardioid polar pattern for transmitter. Receiver & Transmitter frequency response 100Hz-18kHz or better. Receiver RF sensitivity < 1.0 μV. Receiver Image rejection > 55dB. Receiver Dynamic range > 95dB and receiver having 32 channels possible. Receiver S/N ratio > 100dB. A distortion < 1%. Transmitter sensitivity - 5.6 mV/Pa, modulation: +/- 40kHz. Approved make:EV, Martin Audio, Renkus Heinz	Nos	4			
24.14	Supply, installation, testing and commissioning of Freestanding Gooseneck Mic with base for podium having dual condenser back electret microphone element. Selectable Omnidirectional/Cardioid/Supercardioid/Hyper Cardioid polar pattern. LED status display and with programmable button for Push to Talk or Push to Mute functions having frequency response 50Hz-20kHz, sensitivity 3.5mV/Pa, clipping level > 125dB SPL, output impedance 200 ohm, Dynamic Range > 100 dB. Approved make:EV, Martin Audio, Renkus Heinz	Nos	4			
24.15	Supply, installation, testing and commissioning of Equipment Rack with lockable and front perforated doors for Above Equipments.	Nos	4			
24.16	Supply, installation, testing and commissioning of XLR Socket / Connector with Suitable Accessories	Set	2			
24.17	Supply, installation, testing and commissioning of Speaker Socket / Connector with Suitable Accessories	Set	2			
24.18	Supply, installation, testing and commissioning of Phone Socket / Connector with Suitable Accessories	Set	2			
24.19	Supply, installation, testing and commissioning of Speaker cable - 2 core 2.5 Sq.mm for loudspeakers	Mtrs	600			
24.20	Supply, laying & testing of 2 core shielded Microphone Cable	Mtrs	100			
24.21	Supply and laying of following size of M.S. Conduit pipe in recess including all accessories MS pull/junction boxes, GI fish wire of 6 SWG, fixing hardware etc., including cutting, chasing the walls/floor and plastering the chased portion and making good the damages etc., complete as required.	Mts	700			
24.22	Supply, installation, testing and commissioning of Podium with Interactive Monitor and Control Port complete as per site requirement.	Nos	4			
	TOTAL SUBHEAD 24: VIDEO PROJECTION & AUDIO SYSTEM FOR Lecture Halls as MENTIONED ABOVE					

SUMMARY OF COST ESTIMATE OF ELECTRICAL WORKS FOR CONSTRUCTION OF HOSPITAL & TEACHING BLOCK & RENOVATION EXISTING HOSPITAL , EXISTING OPD & RESIDENTIAL BLOCK AT CHAMBA , HIMACHAL PRADESH

S.No.	Description	CHAMBA Amount (In Rs.)	In Figure
1	SUB HEAD 1: HT SUB STATION		
2	SUB HEAD 2: MAIN LT PANEL		
3	SUBHEAD 3: DG SET & ACCESSORIES		
4	SUBHEAD 4: RISING MAINS		
5	SUB HEAD 5: MV PANELS		
6	SUB HEAD 6: MCB DISTRIBUTION BOARDS.		
7	SUBHEAD 7: UPS SYSTEM		
8	SUB HEAD 8: WIRING		
9	SUB HEAD 9: LIGHT FIXTURE AND FANS		
10	SUB HEAD 10: TELEPHONE SYSTEM		
11	SUBHEAD 11: CONDUITING FOR COMPUTER SYSTEM .		
12	SUB HEAD 12: CONDUITING FOR TV OUTLETS		
13	SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM		
14	SUB HEAD 14: PUBLIC ADDRESS SYSTEM		
15	SUB HEAD 15: CCTV SURVEILLANCE SYSTEM		
16	SUB HEAD 16: NURSE CALL SYSTEM		
17	SUBHEAD 17: INVERTER		
18	SUB HEAD 18: LIFTS		
19	SUB HEAD 19: LT CABLES		
20	SUBHEAD 20: EARTHING		
21	SUBHEAD 21: LIGHTNING PROTECTION		
22	SUBHEAD 22: SOLAR PHOTVOLTAIC POWER GENERATION		
23	SUBHEAD 23: OUT DOOR LIGHTING		
24	SUBHEAD 24: VIDEO PROJECTION & AUDIO SYSTEM FOR Lecture Halls		
GRAND TOTAL FOR ALL ELECTRICAL WORKS			

BILL OF QUANTITIES (B.O.Q.) OF HVAC WORKS FOR TEACHING & NEW HOSPITAL BLOCK- CHAMBA (H.P.)							
Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items whatsoever which may be required to fulfill the intent and purpose as laid down in the specifications and/or the drawings.							
The tenderer shall quote rates in figures and in words under column 6/7 and extend amount to column 8							
A)		EQUIPMENTS					
1.0		WATER CHILLING UNITS					
1.1		Supply, installation, testing & commissioning of 125 TR (actual) capacity air cooled water chilling units as specified and shown in equipment schedule complete as per specifications with- a. Screw/Scroll Compressors with motor. b. Drive package c. Mounting frames for all components d. Air cooled condenser with accessories. e. Chiller with accessories. f. Refrigerant piping, fittings, accessories and valves etc. g. Insulation of chiller and suction line. h. First charge of refrigerant and oil. i. Base frame with vibration isolators. j. Bellows in suction and discharge line for vibration isolation of suitable capacity. k. Automatic capacity control arrangement. l. Let Safety controls, flow switches, pressure gauge, thermometer etc. as per specifications. m. Suitable capacity motor with necessary insulation, starter panel complete with all necessary switchgears and control complete as required. n. Necessary water drain & air purge valves wherever required. o. Necessary lubrication device as per specifications complete. p. Microprocessor based control panel complete with accessories as per specifications and BMS compatible BACNET / Modbus Protocol. q. COP as per ECBC and ASHRAE90.1 Chilled Water Leaving temp. 44 deg. F Chilled Water Entering temp. 54 deg. F Chiller fouling factor = 0.0005 (BFS units) Ambient temperature = 40 deg. C Complete water chilling machine as above. (2W+1S)	3	Nos			
2.0		WATER CIRCULATION PUMPS					
2.1		Primary Chilled Water Pumps Supply, installation, testing and commissioning of split casing end suction type centrifugal chilled water pump sets factory assembled and tested for rated efficiency mounted on a common base frame etc. each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments. a. Pump with IP55 IEC induction motor with class F insulation, IE3. b. Channel base with vibration isolators, coupling, coupling guard etc. c. Cladded insulation and anti corrosive coating inside and outside casing etc. d. 2 Nos. - 150 mm dia dial type pressure gauge e. Pumps shall be suitable for operation on 415 +/- 10% Volts / 3ph / 50 Hz / AC power supply. f. Bellows in suction and discharge line for vibration isolation of suitable capacity.					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		The pump characteristic shall be as follows:					
2.1.1		Water flow rate= 300 USGPM Head =14 Metre WC Primary chilled water pumps as described above. (2W+1S)	3	Nos			
2.2		Secondary Pumps & Variable Speed Pumping System Supply, installation, testing and commissioning of split casing type centrifugal chilled water recirculation pumps mounted on a common base etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments: a. Pump with IP55 IEC induction motor with class F insulation, IE3. b. Channel base with vibration isolators, coupling, coupling guard etc. c. Cladded insulation and anti corrosive coating inside and outside casing etc. d. 2 Nos. - 150 mm dia dial type pressure gauge. e. Pumps shall be suitable for operation on 415+/- 10% Volts/3ph /50 Hz /AC power supply. f. The price will include control software and networking hardware and software for integration and compatibility with BMS (BACNET Protocol) from the pump supplier. g. All pumps to be provided with separate VFD's (variable frequency drives). Separate control panel for each set. Panel should also consist of cooling fan. h. Electronic Differential Pressure Transmitters and separate PLC's for each set. i. The cost will include making necessary flanged suction and delivery headers in C Class MS. j. Bellows in suction and discharge line for vibration isolation of suitable capacity. k. Complete set system to be mounted on a common MS base frame and shall follow following duty: The pump characteristic shall be as follows:					
2.2.1		Water Flow Rate = 300 USGPM Head = 20 Metre WC Secondary chilled water pumps as described above. (2W+1S)	3	Nos			
3.0		AIR HANDLING UNITS					
3.1		Supply, installation, testing and commissioning of sectional construction draw through type Air Handling Units (double skin type) of horizontal /2-tier as specified & shown in schedule of equipment complete with the following:- a. Fan Section and canvas connection, Mixing Box, Thermal break profile (double skin type). b. Centrifugal blower. c. Coil section with cooling coil, heating coils as per specifications, minimum 2 bend GSS/DWC aluminum. d. Pre filters with filter section in all AHUs. e. Fine and hepa filters with filter section wherever specifically specified as per AHU schedule. Wherever fine/hepa filters are specified, item shall include factory fabricated double skin plenum of same specifications as AHU panels and complete with filter frameworks. Fine/hepa filter section along with discharge plenum shall be part of AHU in upper tier. f. Drain pan, drain connection. g. Squirrel cage induction IP 55 IEC, insulation class F, Duty S1, IE3 drive motor, drain arrangement and del. h. Necessary vibration isolators & supporting arrangement.					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		i. Fresh air intake arrangement, necessary water drain & air purge valves wherever required etc.					
		j. Camass connections, necessary foundations, 2 nos. pressure gauge, 2 nos. thermocouple etc.					
		k. Controls for AHUs comprising of a set of PN-16 rating 2 Way pressure independent dynamic balancing cum control valve of required size fitted with modulating actuators having manual override facility on each AHU alongwith wiring for interconnections with 1.5 sq. mm Cu Conductor multicore armoured complete as required. The actuator shall have required shut off capability of minimum 4 bar rating. The actuator shall be compatible with BMS. The valve actuator shall be capable of accepting 2-10 volt DC, 4-20 mA electric signal and shall provide similar transduced feedback output signal to control system.					
		l. Pre Filter : 90% down to 10 micron, Fine filter : 99% down to 3 micron (MERV-14), HEPA filter 99.97% down to 0.3 micron (MERV-17).					
3.1.1		AH4GF-02 - 9500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.2		AH4FF-02 - 4000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.3		AH4FF-03 - 13500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.4		AH4F-04 - 11500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.5		AH4F-05 - 9500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.6		AH4F-02 - 11000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.7		AH4F-03 - 8000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.			
3.1.8		AH4FF-01 - 4500cfm/ 6RD Cooling Coil/135 mm static, with pre, fine & HEPA filters, (Bar, CSSD Sterile Area)	1	Nos.			
3.2		OT AHUs					
		Supply, installation, testing and commissioning of sheet metal sectionalised construction draw thru type in double skin construction. Each Air Handling Units shall be with pre filter section with prefilters, mixing chamber, minimum 2 bend GSS/PVC eliminators, chilled water cooling coil of copper tube & Al fins construction, Oil duct heater of 3KW capacity with wall mounted electric panel, squirrel cage induction motor with vfd starter mounted on AHU, motor efficiency class IE3 suitable for 415+/-10% V, 50 Hz 3 Phase AC supply suitably designed for variable frequency drive, backward curved centrifugal fan (belt / direct driven), fine filters section, suitable pan type humidifier with humidifier section, suitable vibration isolation arrangement. Coil size shall be selected for a maximum face velocity of 500 FPM and static pressure shall be 135 mm WG. The air moving capacities shall be as detailed below. These units shall be in accordance with drawings and specifications.					
		The heaters shall be controlled by independent thermostats / humidistats / through electro magnetic type contractors and safety thermostats / geysers as specified complete with wiring for interconnections with 1.5 sq. mm. copper conductor multi core armoured cable. The oil tank shall be 2mm thick ss 304L, pipe 19 mm dia of ss304 L. (All these AHUs shall be with thermal break profile and all its fans shall be AMCA certified)					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		(Hepa filters shall be supplied and installed at terminals by OT Vendor, the cost of these HEPA filters not to include in AHU cost)					
3.2.1		AH-GF-01, 6F-02, 7F-01 - 3000cfm / 6RD Cooling Coil/135 mm static	3	Nos.			
3.2.2		AH4F-01, 6F-03 - 3500cfm / 6RD Cooling Coil/135 mm static	2	Nos.			
4.0		SPLIT AIR CONDITIONERS Supply, installation, testing and commissioning of "H-wall" split air conditioner comprising of the following: a) Outdoor condensing Units b) Indoor Evaporative Units c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping. d) Safety and operational controls e) H-wall splits shall be suitable for single phase power supply and complete with suitable rating voltage stabilizer. f) Mounting arrangement and structural supports for outdoor unit are included. g) The units should have 3 star rating from BEE.					
4.1		Capacity : 2.0 TR	1	Nos.			
5.0		Inline Fans/Propeller Fans/ Ventilation fans					
5.1		Supply, installation, testing and commissioning of Inline Fans as shown in drawings and as per equipment schedule. Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/-6% V, 50 Hz AC supply. Item shall be complete with starter & cabling.					
5.1.1		Inline Fans Duty: Laboratory Exhaust Air Quantity :1000 CFM Static Pressure :20 mm wg	3	Nos.			
5.1.2		Duty: Toilet/Laboratory Exhaust Air Quantity :700 CFM Static Pressure :20 mm wg	10	Nos.			
5.1.3		Duty: Toilet Exhaust Air Quantity :600 CFM Static Pressure :20 mm wg	14	Nos.			
5.1.4		Duty: Toilet/Laboratory Exhaust Air Quantity :500 CFM Static Pressure :20 mm wg	34	Nos.			
5.1.5		Duty: Laboratory Exhaust Air Quantity :350 CFM Static Pressure :20 mm wg	8	Nos.			
5.2		Supplying, installing, testing and commissioning of direct driven Propeller fan for exhaust air as shown in drawings. Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate, accessories like wire guard, bird screen and fixed louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows:					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
5.2.1		225 mm dia 1400 RPM fan suitable for 220 +/-10% volts, 50 Cycles, 1 Phase AC Supply.	10	Nos.			
5.2.2		300 mm dia 1380 RPM fan suitable for 220 +/-10% volts, 50 Cycles, 1 Phase AC Supply.	4	Nos.			
		Ventilation Fans					
5.3		Tube Axial Flow Fans					
		Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply with IP 55 protection, class 'F' insulation and IE3 class. Fan shall be complete with gravity louvers, vibration isolators.					
5.3.1		Duty: Lift well pressurisation Air Quantity: 8000 CFM Static Pressure: 25 mm wg	3	No.			
5.3.2		Duty: Lift well pressurisation Air Quantity: 7500 CFM Static Pressure: 25 mm wg	6	No.			
5.3.3		Duty: Lift lobby pressurisation Air Quantity: 12000 CFM Static Pressure: 25 mm wg	1	No.			
5.3.4		Duty: Lift lobby pressurisation Air Quantity: 11500 CFM Static Pressure: 25 mm wg	3	No.			
		Floor ventilation (Fresh Air Supply)					
5.3.5		Air Quantity: 2000 CFM, 25 mm st. pr.	1	Nos.			
5.3.6		Air Quantity: 2500 CFM, 25 mm st. pr.	2	Nos.			
5.3.7		Air Quantity: 3500 CFM, 25 mm st. pr.	6	Nos.			
5.3.8		Air Quantity: 4000 CFM, 25 mm st. pr.	5	Nos.			
5.3.9		Air Quantity: 4500 CFM, 25 mm st. pr.	2	Nos.			
5.3.10		Air Quantity: 6000 CFM, 25 mm st. pr.	1	Nos.			
5.4	NDSR	Tube Axial Fans (Fire rated)					
		Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply with IP 55 protection, class H insulation and IE3 class. Fan shall be complete with vibration isolators, gravity louvers. Fans shall be 250 deg C, 2hrs fire rated.					
		Smoke exhaust on floors					
5.4.1		Air Quantity: 6000 CFM, 25 mm st. pr.	4	Nos.			
5.4.2		Air Quantity: 7500 CFM, 25 mm st. pr.	4	Nos.			
6.0	NDSR	Centrifugal Fans					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supply, installation, testing and commissioning of SISM CENTRI FANS for ventilation system. Each fan shall be complete with TEFC type II 55 motor with class F insulation, belt drive, pulley mounted on motor & fan shaft, belt guard, motor mount, casing and vibration isolators as per specifications and shop drawings. All expose fan shall be covered with G housing as per approved shop drawings to protect fan and motors from weather. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply. Fan shall be complete with gravity louvers.					
6.1		Duty: Laundry ventilation Air Quantity : 13500 CFM Static Pressure : 35 mm wg	1	Nos.			
7.0		Air Washer Unit Supply, installation, testing and commissioning of air washer units for air cooling work constructed as per detailed specifications and drawings, complete with 50mm thick prefilter, minimum 200mm deep celldeck pad, water circulating pump, DIDW centrifugal fan, TEFC squirrel cage induction motor V-belt & drive set vibration isolators, internal piping with class 'B' piping, quick fill, make up drain, overflow correction float valve etc. complete with all respects. Mounting frame of angle iron for floor / wall mounting. Price must include starter panel, cabling, control wiring, earthing etc.					
7.1		Duty: Kitchen ventilation 13500 CFM with 50mm static pressure	1	Nos.			
8.0		Hot Water Generator Supply, installation, testing & commissioning of Electric Hot Water Generator for winter heating/monsoon reheating system. Hot water generator shall be with IP55 protection and complete with controls, sensors, control cabling, piping and fittings, thermal insulation, base frame etc. as per specifications. HWG shall be BMS compatible with RS 485 communication port.					
8.1		Capacity : 200 KW Status : (D/W+HS) Temp IN/OUT : 110/125 DegF	2	Nos.			
9.0		EXPANSION TANK Supply, installation, testing and commissioning of 1000 litres capacity expansion tank fabricated from 3mm MS sheet and having 19 mm thick aluminium foil faced nitrile rubber foam insulation covered with 28 Ga Aluminium sheet with man hole cover, drain, overflow, quick fill, water supply connections, valves and complete in all respects as per drawings and specification.					
9.1		1000 ltrs.	1	Ns.			
10.0	NDSR	VRV/VRF System for Teaching Block Variable Refrigerant Volume System					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supply, Installation, Testing and commissioning of Air cooled & inverter based modular type variable refrigerant volume type air conditioning system with R410a refrigerant suitable for 415 ± 10%, 50 Hz. The system shall have both heating and cooling modes. The system shall be BMS Compatible with BACnet / MODbus protocol. The unit shall consist of indoor units and external condensing units and other accessories as listed below complete in all respects as under:					
10.1		Outdoor Unit Supply, lifting, shifting, positioning, installation, testing & Commissioning of outdoor units including topping R410a gas as per site requirements for qys mentioned below complete as per specification and drawings.					
10.1.1		20 HP Heat Pump type including indoor outdoor connection kit.	13	No.			
10.1.2		18 HP Heat Pump type including indoor outdoor connection kit.	1	No.			
10.1.3		16 HP Heat Pump type including indoor outdoor connection kit.	3	No.			
10.1.4		14 HP Heat Pump type including indoor outdoor connection kit.	3	No.			
10.2		Supply, lifting, shifting, positioning, installation, testing & Commissioning of Hi-wall type indoor units for qys mentioned below complete as per specification and drawings.					
10.2.1		1.0 TR	5	Nos.			
10.2.2		1.5 TR	24	Nos.			
10.2.3		2.0 TR	12	Nos.			
10.3		Supply, lifting, shifting, positioning, installation, testing & Commissioning of round flow cassette indoor units for qys mentioned below complete as per specification and drawings.					
10.3.1		4.0 TR	1	Nos.			
10.3.2		3.0 TR	3	Nos.			
10.3.3		2.5 TR	18	Nos.			
10.3.4		2.0 TR	6	Nos.			
10.5		Supply, lifting, shifting, positioning, installation, testing & Commissioning of Ceiling mounted ductable type indoor units for qys mentioned below complete as per specification and drawings.					
10.5.1		Ductable unit: 6.0 TR	4	Nos.			
10.5.2		Ductable unit: 5.0 TR	6	Nos.			
10.5.3		Ductable unit: 4.5 TR	16	Nos.			
10.5.4		Ductable unit: 4.0 TR	4	Nos.			
10.6		Supply, lifting, shifting, positioning, installation, testing & Commissioning of Ceiling mounted duct type TFA indoor units for qys mentioned below complete with pre & fine filters as per specification and drawings.					
10.6.1		Ductable TFA unit: 8.5 TR	1	Nos.			

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
10.6.2		Ductable TFA unit: 6 TR	1	Nos.			
10.7		Supply, installation, testing & commissioning of Imported Remote controllers for operation of indoor units.	101	Nos.			
10.8		Supply installation testing and commissioning of central controller suitable for complete installation. Which shall be BMS Compatible with BACnet/Modbus protocol.	2	Nos.			
10.9		Supply, installation, commissioning of interconnecting refrigerant pipe work (including refrigerant joints) with (9mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per specifications, all piping inside the room shall be properly supported with MS hanger & clamps.					
10.9.1		41.3 m m duly insulated with 19/13mm nitrile rubber	75	Rmt			
10.9.2		34.9 m m duly insulated with 19/13mm nitrile rubber	75	Rmt			
10.9.3		28.6 m m duly insulated with 19/13mm nitrile rubber	350	Rmt			
10.9.4		22.2 m m duly insulated with 19/13mm nitrile rubber	425	Rmt			
10.9.5		19.1 m m duly insulated with 19/13mm nitrile rubber	375	Rmt			
10.9.6		15.9 m m duly insulated with 19/13mm nitrile rubber	1000	Rmt			
10.9.7		12.7 m m duly insulated with 19/13mm nitrile rubber	500	Rmt			
10.9.8		9.5 m m duly insulated with 19/13mm nitrile rubber	900	Rmt			
10.9.9		6.4 m m duly insulated with 19/13mm nitrile rubber	275	Rmt			
10.10		Drain Piping Supply, installation, testing and commissioning of rigid PVC piping conforming to IS 4985 with solvent cement joints complete with fittings, supports as per specifications and duly insulated with 6 mm thick closed cell nitrile rubber.					
10.10.1		50 mm dia	175	Rmt			
10.10.2		40 mm dia	250	Rmt			
10.10.3		32 mm dia	650	Rmt			
10.11		Supply installation of powder coated MS Tray type support covered with Galv sheet 300 mm wide for all exposed copper pipes running on terrace	250	Rmt			
10.12		Isolators Weather proof box with MCCBs of suitable ratings near the outdoor units for isolation with RCCB 300 mA.	20	Nos.			
10.13		Control & Transmission Wiring Supply, installation, testing and commissioning of control cum transmission wiring of 2 core x 1.5 sqmm copper in suitable PVC conduits between indoor and out door unit & between indoor unit and their corded remotes.	2500	Rmt			
10.14		HEAT RECLAIM VENTILATION UNIT					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supply, installation, testing and commissioning of heat reclaim ventilation with inlet and exhaust blower with fan (inlet & exhaust) desiccant absorption material non contact seal, modular design with Aluminium supports of extruded section, galvanized steel plate casing, self extinguishable polyurethane foam insulation, multi-directional fibrous fleeces air filter including electric panel with cabling & earthing complete as per requirements.					
8.1		75% efficiency (F/A - 2000 cfm & R/A 2000 cfm)	3	Nos.			
8.2		(F/A - 1000 cfm & R/A 1000 cfm)	1	Nos.			
						SUB TOTAL	
						SUB TOTAL	
B)		PLUMBING					
11.0	DSR	INSULATED CHILLED WATER PIPING (Nitrile Rubber Insulation)					
11.1	16.2	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with following closed cell elastomeric nitrile rubber of minimum 45 Kg / m ³ density, thermal conductivity 0.037 W/MK or better at 20 deg mean temperature class 'C' insulation applied by suitable adhesive complete including repairing of damage to building etc. as per specifications and as required complete in all respect Note:-The Pipes of sizes 150 mm & below shall be M.S. 'C' class as per IS: 1239 and pipes size above 150 mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35 mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.					
11.1.1	16.2.6	150mm dia. (32 mm thick insulation)	110	RM			
11.1.2	16.2.7	125mm dia. (32 mm thick insulation)	90	RM			
11.1.3	16.2.8	100mm dia. (32 mm thick insulation)	90	RM			
11.1.4	16.2.9	80mm dia. (32 mm thick insulation)	120	RM			
11.1.5	16.2.10	65mm dia. (32 mm thick insulation)	100	RM			
11.1.6	16.2.11	50mm dia. (32 mm thick insulation)	70	RM			
11.1.7	16.2.12	40mm dia. (32 mm thick insulation)	90	RM			
11.1.8	16.2.13	32mm dia. (19 mm thick insulation)	20	RM			
11.1.9	16.2.14	25mm dia. (19 mm thick insulation)	10	RM			
12.0	DSR	INSULATED VALVES & STRAINERS					
		Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.					
12.1	16.7.1	Butterfly valves (Manual): with C1 body SS Disc, Nitrile Rubber Seal & O-Ring IN 16 pressure rating for chilled water/ hot water circulation as specified					
12.1.1	16.7.1.2	150 mm dia.	2	Nos			

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
12.1.2	16.7.1.3	125 mm dia.	18	Nos			
12.1.3	16.7.1.4	100 mm dia.	8	Nos			
12.1.4	16.7.1.5	80 mm dia.	11	Nos			
12.1.5	16.7.1.6	65 mm dia.	9	Nos			
12.1.6	16.7.1.7	50 mm dia.	6	Nos			
12.1.7	16.7.1.8	40 mm dia.	18	Nos			
12.1.8	NDSR	32 mm dia	2	Nos			
12.2	16.7.2	Balancing valves with built in measuring facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.					
12.2.1	16.7.2.3	125 mm dia.	3	Nos			
12.2.2	16.7.2.4	100 mm dia.	5	Nos			
12.2.3	16.7.2.5	80 mm dia.	5	Nos			
12.2.4	16.7.2.6	65 mm dia.	3	Nos			
12.2.5	16.7.2.7	50 mm dia.	2	Nos			
12.2.6	16.7.2.8	40 mm dia.	6	Nos			
12.3	16.7.3	Non return/Check valves : with dual plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.					
12.3.1	16.7.3.3	125 mm dia.	6	Nos			
12.4	16.7.4	V-strainers of Ductile C I Body flanged ends with stainless steel strainer for chilled / hot water circulation including insulation as specified.					
12.4.1	16.7.4.3	125 mm dia.	6	Nos			
12.4.2	16.7.4.4	100 mm dia.	1	Nos			
12.4.3	16.7.4.5	80 mm dia.	3	Nos			
12.4.4	16.7.4.6	65 mm dia.	3	Nos			
12.4.5	16.7.4.7	50 mm dia.	2	Nos			
12.4.6	16.7.4.8	40 mm dia.	6	Nos			
12.5		Providing and fixing in position the following Gate Valves duly insulated as per specifications:					
12.5.1		50 mm dia Valves	2	Nos.			
12.5.2		40 mm dia Valves	2	Nos.			
12.5.3		32 mm dia Valves	2	Nos.			
12.6	NDSR	Auto Air Vent Valves					
12.6.1		15 mm dia	4	Nos.			
12.6.2		20 mm dia	4	Nos.			
12.6.3		25 mm dia	4	Nos.			
12.7	NDSR	Ball Valve with strainer					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
12.7.1		25 mm	2	Nos.			
12.7.2		20 mm	2	Nos.			
12.8	NDSR	Ball valve without strainer					
12.8.1		25 mm	4	Nos.			
12.8.2		20 mm	4	Nos.			
12.9		Supply, installation, testing and commissioning cooling-heating thermostats					
12.9.1		For AHUs	13	Nos.			
13.0	NDSR	DRAIN PIPING					
13.1		Supply, laying/fixing, testing and commissioning of G.I medium class ERW piping conforming to IS:1239 with necessary clamps, supports, anti vibration mountings, hangers and fittings such as bends, tees, reducers etc. duly insulated with nitrile rubber insulation and finally applying 0.63 mm aluminium cladding as per specifications for condensate drain from air handling units and chillers etc.					
13.1.1		50 mm dia	20	RM			
13.1.2		40 mm dia	40	RM			
13.1.3		32 mm dia	40	RM			
13.1.4		25 mm dia	30	RM			
						SUB TOTAL	
C)		AIR DISTRIBUTION					
14.0	DSR	GSS DUCTING					
14.1	16.12.1	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required					
14.1.1	16.12.1.4	Thickness 1.25 mm sheet	350	Sqm.			
14.1.2	16.12.1.3	Thickness 1.00 mm sheet	100	Sqm.			
14.1.3	16.12.1.2	Thickness 0.80 mm sheet	1300	Sqm.			
14.1.4	16.12.1.1	Thickness 0.63 mm sheet	1900	Sqm.			
15.0	NDSR	ALUMINIUM DUCTING					
15.1		Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition.					
15.1.1		Thickness 0.80 mm sheet	500	Sqm.			
15.1.2		Thickness 1.00 mm sheet	200	Sqm.			
16.0	DSR	FIRE DAMPERS					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
	16.20	Supplying, fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring, the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.					
16.1	16.20.1	Fire/smoke Damper	10	Sqm			
16.2	16.20.2	Actuator	26	sets			
17.0	DSR	VOLUME CONTROL DAMPERS					
17.1	16.13	Supply, installation, testing and commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws, hinges, flanges etc. as per specifications.	12	Sqm.			
18.0	DSR	CEILING DIFFUSERS					
18.1	16.17	Supplying, fixing, testing, commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	8	Sqm.			
18.2	16.18	Supplying, fixing, testing, commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	8	Sqm.			
19.0	DSR	GRILLES					
		Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.					
19.1	16.15	Supplying & fixing of powder coated extruded aluminium Supply Air Grilles with aluminium volume control dampers as per specifications.	8	Sqm.			
19.2	16.16	Supplying & fixing of powder coated extruded aluminium Return Air Grilles with louvers but without volume control dampers complete as required.	8	Sqm.			
20.0	NDSR	LINEAR GRILLES					
		Supply, installation, testing and balancing of air linear grilles of powder coated aluminium construction suitable for installation in walls/false ceiling boxing etc as per specifications and drawings.	6	Sqm.			
21.0	NDSR	GRILLE DAMPERS					
		Supply, installation and balancing of aluminium construction volume control dampers for linear grilles.	6	Sqm.			
22.0	NDSR	LAMINAR FLOW DIFFUSERS					
		Providing & fixing of 18swg aluminium powder coated non-respiratory 100% air tight laminar flow diffusers. LFDs shall have 50% perforation. The perforated front face is operable hinge type complete with key operated opposed blade dampers from front.					
22.1		Size: 1200 x 600	24	Nos.			
23.0	NDSR	FRESH AIR GRILLES with bird screen					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supply, installation, testing, commissioning and balancing of fresh air opening comprising of powder coated extruded aluminium louvers with bird screen, projection with frame and volume control damper with lever mounting arrangement etc. as per specifications and drawings.	5	Sqm.			
24.0		DUCT INSULATION					
24.1	16.23	Supplying and fixing of following thickness duty laminated aluminium foil mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.					
24.1.1	16.23.1	19 mm	1600	Sqm.			
24.1.2	16.23.2	25 mm	100	Sqm.			
25.0		ACOUSTIC					
25.1		DUCT ACOUSTIC LINING					
	16.21	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m ³ , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	20	Sqm.			
		Note: No lining inside supply / return duct or plenum shall be done if the airside system is equipped with fine, hepa filters.					
						SUB TOTAL	
D)		ELECTRICAL					
26.0	NDSR	MAIN HVAC PANEL					
		Supply, installation, testing and commissioning of A/C Panel, Type Tested Assembly (TTA) as per IEC 61439-1&2 cubicle type, totally enclosed, free standing type, dust, damp and vermin proof panel, powder coated, made up of CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.					
		Note:					
i		All ACBs shall have spare contacts					
ii		All ACBs should have low let-through KA for 1 sec					
iii		All MCCBs shall have less than 100%					
iv		Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door for all outgoing having microprocessor based MCCB					
v		All indication Lamps will be LED Type.					
vi		All starters of this panel shall be provided with digital ampere meter with suitable CTs, thermal overload relay, inbuilt/separate single phase preventer, contactors, fimers, spare NO-NC contacts, push buttons, ON, OFF, TRIP indication (LED Type) and potential free contacts and relay for interlocking to FDA etc. complete as required.					
vii		100 VA transformer 220v/24v AC for control wiring with 10 nos. 6A SF					
		MCCB 10 KA in all AHU panel is also in the scope of supply					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
26.1		Main/Emergency Air-conditioning MCC in plant room					
A		INCOMER					
i		2 No. ACB Panels each having following 800A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button. R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs. Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB. Push button to Close the ACB. 1 Digital multifunction meter with suitable C.Ts.					
B		BUSBARS 800 Amps IPN busbars of aluminium with temperature rise of 40 degree celsius over and above ambient temperature of 45 degree celsius.					
C		Bus Coupler					
i		1 No. ACB Panels each having following 800A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button. Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB. Push button to CLOSE the ACB. 1 Set of Digital Ammeter with ASS and C.Ts.					
D		OUT GOING					
i		3 Nos. MCCB feeder as per following details/specifications: For Water Chilling Machines 400 Amp 415 volts, 50 KA, Four Pole, MCCB with Microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F Protection. Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers. Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP. Digital ammeter with selector switch with one set Suitable C.Ts.					
ii		3 Nos. MCCB feeder as per following details/specifications: For Hot Water Generators 400 Amp 415 volts, 50 KA, Four Pole, MCCB with Microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F Protection. Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers. Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP. Digital ammeter with selector switch with one set Suitable C.Ts.					
iii		3 Nos. MCCB feeder as per following details/specifications:					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		63 Amp 415 volts, 50 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers.					
		3 Phase, fully automatic Star Delta Starter for 10 HP secondary chilled water PUMPS.					
iv		3 Nos. MCCB feeder as per following details/specifications:					
		32 Amp 415 volts, 50 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers.					
		3 Phase, fully automatic DOL starter for 7.5 HP Primary Chilled Water Pumps.					
v		2 Nos. MCCB feeder as per following details/specifications: For Floor Panels of Air Handling Units					
		100 Amp 415 volts, 50 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Is.					
vi		2 Nos. MCCB feeder as per following details/specifications:					
		32 Amp 415 volts, 50 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCBs should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Is.					
		Main HVAC panel Complete as above	1	Panel			
26.2	NDSR	AHU Distribution Panels					
		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted/free standing type, powder coated, dust damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.					
		NOTE					
i		All MCCBs shall have $\epsilon_{cr} = 100\%$					
ii		100 VA transformer 220v/24v AC for control wiring with 10 nos. 6A SF					
		MCB 10 KA in all AHU panel is also in the scope of supply					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
iii		All starters shall be provided with digital ampere meter with suitable C.B.s, thermal overload relay, inbuilt/separate single phase preventer, contactors, Timers, spare NO-NC contacts, Push Buttons ON, OFF, TRIP indication (LED Type) and potential free Contact & relays for interlocking to FDA etc. complete as required.					
v		All indication Lamps will be LED Type.					
vi		All MCCBs shall have extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
26.2.1		AHP-BF-01 INCOMER : 1 nos. 63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. R,Y,G&B phase indicating lamp(LED type) with 6A control SPMCB & ON, OFF, TRIP Indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital am meter with selector switch with one set Suitable C.Is.					
		Bus Bar 300 A IPN Aluminium bus bar 415V , 50 Hz.					
i		OUT GOINGS: 3 set -32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 7.5 HP Ventilation Fan motor as required. Complete panel as above	1	Panel			
26.2.2		AHP-GF-01, 6F-02 INCOMER : 1 nos. 125 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. R,Y,G&B phase indicating lamp(LED type) with 6A control SPMCB & ON, OFF, TRIP Indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital am meter with selector switch with one set Suitable C.Is.					
		Bus Bar 300 A IPN Aluminium bus bar 415V , 50 Hz.					
i		OUT GOINGS: 3 set -32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 5/7.5 HP AHU motor as required.					
ii		2 set -32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker for Humidifier/ Monsoon Reheater as required.					
iii		2 set -16 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 2 HP Ventilation fan motor as required. Complete panel as above	2	Panel			
26.2.3		AHP-FE-01 INCOMER :					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		1 nos. 100 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp(LED type) with 6A control SPMCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar					
		300 A IPN Aluminium bus bar 415V, 50 Hz.					
		OUT GOINGS:					
i		2 Set-63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		3 Phase, fully automatic Star Delta Starter for 12.5 HP AHU motor as required.					
ii		4 set-16 A, 415 volts, 35 KA C-Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 0.75/1.5 HP Ventilation fan motor as required.					
		Complete panel as above	1	Panel			
26.2.4		AHPFE-02					
		INCOMER:					
		1 nos. 100 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp(LED type) with 6A control SPMCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar					
		300 A IPN Aluminium bus bar 415V, 50 Hz.					
		OUT GOINGS:					
i		3 set-32 A, 415 volts, 35 KA C-Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 5/7.5 HP AHU motor as required.					
ii		3 set-16 A, 415 volts, 35 KA C-Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 1.5/2 HP Ventilation fan motor as required.					
		Complete panel as above	1	Panel			
26.2.5		AHP-SF-01, TF-01, 4F-01, 5F-01					
		INCOMER:					
		1 nos. 63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp(LED type) with 6A control SPMCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Is.					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Bus Bar 300 A IPN Aluminium bus bar 415V, 50 Hz.					
i		OUT GOINGS: 4 set -16 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 1/1.5/3 HP Ventilation fan motor as required. Complete panel as above	4	Panel			
26.2.6		AHP-GE-01, 7F-01 INCOMER : 1 nos. 63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. R,Y,&B phase indicating lamp (LED type) with 6A control SPMCB & ON/OFF, TRIP Indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar 300 A IPN Aluminium bus bar 415V, 50 Hz.					
i		OUT GOINGS: 2 set -32 A, 415 volts, 35 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 7.5 HP AHU motor as required.					
ii		3 set -16 A, 415 volts, 35 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 0.75/1/2 HP Ventilation fan motor as required. Complete panel as above	2	Panel			
26.2.7		AHP-GE-01, 6F-02 INCOMER : 1 nos. 125 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. R,Y,&B phase indicating lamp (LED type) with 6A control SPMCB & ON/OFF, TRIP Indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar 300 A IPN Aluminium bus bar 415V, 50 Hz.					
i		OUT GOINGS: 3 set -32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 5/7.5 HP AHU motor as required.					
ii		2 set -32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker for Humidifier / Monsoon Reheater as required.					
iii		2 set -16 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 2 HP Ventilation fan motor as required.					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Complete panel as above	2	Panel			
26.2.8		AHP-7E-02 INCOMER : 1 nos. 200 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. R,Y&B phase indicating lamp (LED type) with 6A control SPMCB & ON, OFF, TRIP indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar 300 A IPN Aluminium bus bar 415V, 50 Hz.					
		OUT GOINGS: 2 Set-63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection. 3 Phase, fully automatic Star Delta Starter for 10 HP AHU motor as required.					
		ii 4 set-32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 5 HP AHU motor as required.					
		iii 6 set-32 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker for Humidifier / Monsoon Reheater as required.					
		iv 3 set-16 A, 415 volts, 10 KA C-Curve, Four Pole, Miniature Circuit Breaker. 3 Phase, fully automatic DOL Starter for 3 HP Ventilation fan motor as required.					
		Complete panel as above	1	Panel			
26.2.9		Panel for Outdoor Units of VRV System for Teaching Block INCOMER : 1 no 630 Amp, 415 volts, 35 KA, Four Pole MCCB Microprocessor based release with variable current settings of O/L, S/C, E/F. All incomers and outgoing should have Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. R,Y&B phase indicating lamp (LED type) with 6A control SPMCB & ON, OFF, TRIP indication. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Is.					
		Bus Bar 800 A IPN Aluminium bus bar 415V, 50 Hz.					
		OUT GOINGS: 20 Set-63 Amp 415 volts, 35 KA FPMCCB, ELCB- 300 mA with thermal magnetic release having variable current settings of O/L, S/C protection for outdoor units of VRV system.					
		ii 1 Set-63 Amp 415 volts, 35 KA FPMCCB with thermal magnetic release having variable current settings of O/L, S/C protection for spare purpose.					
		Complete panel as above	1	Panel			

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
27.0		CABLING					
27.1	NDSR	L.T. CABLES Supply of following sizes of 1.1 KV grade multicore aluminium conductor PVC sheathed armoured XLPE cable as per IS 7098.					
27.1.1		3.5 Core 25 Sqmm.	700	Metre			
27.1.2		3.5 Core 35 Sqmm.	50	Metre			
27.1.3		3.5 Core 50 Sqmm.	400	Metre			
27.1.4		3.5 Core 70 Sqmm.	50	Metre			
27.1.5		3.5 Core 150 Sqmm.	50	Metre			
27.1.6		3.5 Core 240 Sqmm.	50	Metre			
27.1.7		3.5 Core 300 Sqmm.	200	Metre			
27.1.8		4 Core 16 Sqmm	50	Metre			
27.1.9		4 Core 10 Sqmm	50	Metre			
27.1.10		4 Core 6 Sqmm	200	Metre			
27.1.11		4 Core 4 Sqmm.	300	Metre			
27.1.12		3 Core 4 Sqmm.	1000	Metre			
27.2	7.8	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size on cable tray as required.					
27.2.1	7.8.1	Up to 35 sq.m.m (clamped with 1m.m thick saddle)	1300	Metre			
27.2.2	7.8.2	Above 35 Sq.m.m and upto 95 Sq.m.m (clamped with 25 X 3mm MS flat clamp)	350	Metre			
27.2.3	7.8.3	Above 95 Sq.m.m and up to 185 Sq.m.m (clamped with 25/40x3mm MS flat clamp)	50	Metre			
27.2.4	7.8.4	Above 185 Sq.m.m and up to 400 Sq.m.m (clamped with 40x3mm MS flat clamp)	250	Metre			
27.3	9.1	Supplying and making end termination with brass compression gland and Aluminium lugs for following sizes of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.					
27.3.1	9.1.20	3.5 Core 25 Sqmm.	25	Each			
27.3.2	9.1.21	3.5 Core 35 Sqmm.	50	Each			
27.3.3	9.1.22	3.5 Core 50 Sqmm.	50	Each			
27.3.4	9.1.24	3.5 Core 95 Sqmm.	25	Each			
27.3.5	9.1.27	3.5 Core 185 Sqmm.	15	Each			
27.3.6	9.1.29	3.5 Core 240 Sqmm.	10	Each			
27.3.7	9.1.30	3.5 Core 300 Sqmm.	10	Each			
27.3.8	9.1.33	4 Core 16 Sqmm	10	Each			
27.3.9	9.1.32	4 Core 10Sqmm	20	Each			
27.3.10	NDSR	4 Core 6 Sqmm	20	Each			
27.3.11	NDSR	4 Core 4 Sqmm.	50	Each			
27.3.12	NDSR	3 Core 4 Sqmm.	20	Each			
28.0	NDSR	CABLE TRAYS					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supply & installation of following sizes of perforated MS cable trays including horizontal & vertical bends, reducers, tees, cross members and other accessories as required and duly supported from the ceiling/wall/floor with MS suspenders/supports and including painting etc. as required					
28.1		300 mm widthx50 mm deep x1.6 mm thickness	100	Mtr			
28.2		200 mm widthx50 mm deep x1.6 mm thickness	100	Mtr			
28.3		150 mm widthx50 mm deep x1.6 mm thickness	200	Mtr			
28.4		100 mm widthx50 mm deep x1.6 mm thickness	200	Mtr			
29.0		Fabrication and Installing following size of Ladder type M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required					
29.1		450 mm width x 62.5 mm depth x 2.0 mm thickness	100	Mtr			
29.2		600 mm width x 62.5 mm depth x 2.0 mm thickness	100	Mtr			
30.0		EARTHING					
30.1	5.4	Earthing with GI plate 600mm X600mm X6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/coal and salt as required	4	Set			
30.2	5.15	Providing and fixing 25mmX5mm GI strip on surface or in recess for connections etc. as required	200	Mtr			
30.3	NDSR	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required					
30.3.1		50mm x 5mm	80	Mtr			
30.3.2		25mm x 3mm	80	Mtr			
30.4		Providing and fixing earth wire of complete as per specifications as required					
30.4.1	5.18	6 SWG wire	100	Mtr			
30.4.2	NDSR	8 SWG wire	300	Mtr			
31.0	NDSR	CONTROL CABLING					
		Supply, laying, effecting proper connections, testing & commissioning of 1.5 sq.m.m. PVC insulated copper multicore cables from AHU's and AC equipments to central contrl of console					
31.1		10 core cable	500	Mtr			
31.2		8 core cable	2000	Mtr			
31.3		6 core cable	100	Mtr			
31.4		3 core cable	100	Mtr			
31.5		2 core cable	200	Mtr			
32.0	NDSR	CONTROL CONSOLE/DESK					

Item No.	DSR/NDSR	Description	Total Qty	Unit	Rate in Rs. (in Figure)	Rate in Rs. (in words)	Amount (Rs.)
1	2	3	4	5	6	7	8
		Supplying, installation, testing & commissioning of floor mounted desk type control console cum indicating panel in the A.C. plant room containing various indications and controls for the complete air-conditioning system comprising chilling units, chilled/ Hot/ condenser water pumps, cooling towers, Ex blower, Fans etc, Hot water generator with test push button facility. The panel shall be fabricated from minimum 1.6mm thick M.S. powder coated sheet of approved design. The air-conditioning module of the central control cum indicating panel shall contain the following accessories.					
		Status indication (ON, OFF & fault) of each compressor for each chilling machine, hot water boiler etc.					
		Push buttons and indicating lamps for remote start & stop and status indication for every nos. of the water circulating pumps, Ex blower, Fans etc.					
		Push buttons and indication lamps for remote start & stop and status indication (On, Off & Fault) for every nos. cooling tower motors and low water level indication for every Nos. cooling towers.					
		Hooter and flashing lamp to indicate operation of any safety/shut down with necessary contactors, accept, reset and test push buttons.					
		Complete wiring with copper conductor PVC insulated multicore 2.5 sq.mm stranded cable (excluding supply of cable, tray, clamps etc) from various equipments in the A.C. plant room, AHU's Terrace plant room and cooling towers etc to the control console panel as required.					
		Complete Panel As above for following blocks					
		For Plant room	1	Panel			
						SUB TOTAL	

	<u>Teaching & New Hospital Block at Chamba (H.P.)</u>		
	<u>SUMMARY SHEET FOR HVAC WORKS</u>		
SECTION	DESCRIPTION OF WORK		AMOUNT(Rs.)
A	EQUIPMENTS		
B	PIPING		
C	AIR DISTRIBUTION		
D	ELECTRICAL		
	GRAND TOTAL		

Construction of Dr. Y. S. Parmar Government Medical College at Nahan, District Sirmour, Himachal Pradesh & Pt. Jawaharlal Nehru Govt. Medical College at Chamba, District Chamba, Himachal Pradesh

Name of Contractor/Firm					
SR.NO	Name of Head	Total Quoted Amount (In Indian Rupees)	Discount if any(%)	Discounted Value	Amount after discount(Rs.)
1	CIVIL-CHAMBA				
2	PHE-CHAMBA				
3	FIRE-CHAMBA				
4	ELECTRICAL-CHAMBA				
5	HVAC-CHAMBA				
	Total in Figures (in Rs.)				