

B.O.Q AND SCHEDULE OF PRICES					
SL. NO.	ITEM DESCRIPTION	QTY.	Unit	P.O. VALUE	
				Unit Rate	Amount
	Air Handling Units (AHU)				
1	Pharma grade stericlean double skin Air handling unit with Thermal Break Profile internally covered 43 mm thk PUF insulated Air handling Unit made out of 24G GI Plain inside and 24G GI outside pre coated sheet, with cold bridge free double door on discharge side of fan, return air plenum with G4 filter, Coil section with 6 row deep chilled water and provision for 2 row deep hot water coil made of copper tube with aluminium fins, velocity across coil not to exceed 2.5 m/s.Bypass damper for 20% capacity of AHU . All coils to be sized for full supply air capacity of AHU. SS insulated drain tray, fan section with DIDW backward curved centrifugal fan, suitable TEFC squirrel cage induction motor (NFLP), drive set consisting of				
	taper lock pulleys & V-belts, Inspection window, filter section after the fan to fix F7 filter. Fresh air, return air, supply air damper & bleed of damper of aluminium extruded construction with provision for fixing H13 HEPA filter in bleed off module. Provision for fixing Magnehelic guages across all filters. (Excluding filters).				
1.1	AHU-02: 1550 CFM @ 130 mmWC Static Pressure	1	No.		
1.2	AHU-04: 1200 CFM @ 130 mmWC Static Pressure	1	No.		
1.3	AHU-06: 4200 CFM @ 130 mmWC Static Pressure	1	No.		
1.4	AHU-07: 2400 CFM @ 130 mmWC Static Pressure	1	No.		
1.5	AHU-08 : 1500 CFM @ 125 mmWC Static Pressure	1	No.		
1.6	AHU-10: 3400 CFM @ 130 mmWC Static Pressure	1	No.		
1.7	AHU-11: 3900 CFM @ 130 mmWC Static Pressure	1	No.		
1.8	AHU-12 : 1100 CFM @ 65 mmWC Static Pressure	1	No.		
1.9	AHU-14 : 3500 CFM @ 65 mmWC Static Pressure	1	No.		
1.1	AHU-15 : 2800 CFM @ 65 mmWC Static Pressure	1	No.		
1.11	AHU-16 : 5700 CFM @ 65 mmWC Static Pressure	1	No.		
1.12	AHU-21 : 10000 CFM @ 65 mmWC Static Pressure	1	No.		
1.13	AHU-22 : 6650 CFM @ 65 mmWC Static Pressure	1	No.		
2	Pharma grade stericlean double skin Air handling unit with Thermal Break Profile internally covered 43 mm thk PUF insulated Air handling Unit made out of 24G GI Plain inside and 24G GI outside pre coated sheet, with cold bridge free double door on discharge side of fan, return air plenum with G4 filter, Coil section with 6 row deep chilled water and 2 row deep hot water coil made of copper tube with aluminium fins, velocity across coil not to exceed 2.5 m/s.Bypass damper for 20% capacity of AHU . All coils to be sized for full supply air capacity of AHU. SS insulated drain tray, fan section with DIDW backward curved centrifugal fan, suitable TEFC squirrel cage induction motor (NFLP), drive set consisting of				
	taper lock pulleys & V-belts, Inspection window, filter section after the fan to fix F7 filter. Fresh air, return air, supply air damper & bleed of damper of aluminium extruded construction with provision for fixing H13 HEPA filter in bleed off module. Provision for fixing Magnehelic gauges across all filters. (Excluding filters).				
2.1	AHU-01 : 2850 CFM @ 135 mmWC Static Pressure	1	No.		
2.2	AHU-03 : 2150 CFM @ 135 mmWC Static Pressure	1	No.		

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2.3	AHU-05 : 1350 CFM @ 135 mmWC Static Pressure	1	No.		
2.6	AHU-17 : 1000 CFM @ 135 mmWC Static Pressure	1	No.		
2.7	AHU-18 : 1000 CFM @ 135 mmWC Static Pressure	1	No.		
2.8	AHU-19 : 1200 CFM @ 135 mmWC Static Pressure	1	No.		
2.9	AHU-20 : 1200 CFM @ 135 mmWC Static Pressure	1	No.		
3	Pharma grade stericlean double skin Air handling unit with Thermal Break Profile internally covered 43 mm thk PUF insulated Air handling Unit made out of 24G GI Plain inside and 24G GI outside pre coated sheet, with cold bridge free double door on discharge side of fan, return air plenum with G4 filter, Coil section with 6 row deep chilled water and Provision for fixing 2 row deep hot water coil made of copper tube with aluminium fins, velocity across coil not to exceed 2.5 m/s.Bypass damper for 20% capacity of AHU . All coils to be sized for full supply air capacity of AHU. SS insulated drain tray, fan section with DIDW backward curved centrifugal fan, suitable TEFC squirrel cage induction motor (NFLP), drive set consisting of				
	taper lock pulleys & V-belts, Inspction window, filter section after the fan to fix F7 & H13 superflow HEPA filter. Fresh air, return air, supply air damper & bleed of damper of aluminium extruded construction with provision for fixing H13 HEPA filter in bleed off module. Provision for fixing Magnehelic gauges across all filters. (Excluding filters).				
3.1	AHU-09 : 7500 CFM @ 125 mmWC Static Pressure	1	No.		
	Ventilation Unit				
5	Single skin Ventilation Unit made out of 16G / 18G pre-painted GI sheet and essentially comprising of Pre filter section with provision for fixing G4 filters, fan section with DIDW forward curved centrifugal fan, Non flame proof TEFC squirrel cage induction motor and complete with anti vibration mounts, provision for magnehelic gauge across filters, Filter section with provision for fixing F7 filters, out let connection complete with service doors / inspection windows with fire retardent canvas connection supply air damper in G.I. construction. (Excluding filters).				
5.1	VENT-01 : 3500 CFM @ 50 mmWC Static Pressure	1	No.		
	Exhaust Unit				
6	Single skin Exhaust Unit made out of 16G / 18G pre-painted GI sheet and essentially comprising of filter section with provision to fix G4 filters, fan section with DIDW forward curved centrifugal fan belt driven by suitable Non flame proof TEFC squirrel cage induction motor and complete with anti vibration mounts, provision for magnehelic gauge across filters, inlet and out let connections complete with service doors/inspection windows and with outlet damper. Single skin rexin flexible connection for fan outlet. (Excluding filters).				
6.1	EXU-01 : 3500 CFM @ 40 mmWC Static Pressure	1	No.		

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	Treated Fresh Air Unit				
7	Double Skin type Pre-cooling unit made out of 24G GI inside plain & 24 G GI powder coated sheet with 25mm thick PUF insulation, comprising of Pre filter section with provision to fix G4 filters, 8 row deep chilled water coil, fan section with centrifugal fan with suitable Non flame proof motor with anti vibration mounts, provision for magnehelic gauges across filters, out let connections complete with service doors, outlet damper. (Including filters).				
7.1	TFA-02 : 300 cfm @ 25 mm WC Static pressure	1	No.		
7.2	TFA-04 : 100 cfm @ 25 mm WC Static pressure	1	No.		
7.3	TFA-06 : 100 cfm @ 25 mm WC Static pressure	1	No.		
7.4	TFA-07 : 100 cfm @ 25 mm WC Static pressure	1	No.		
7.5	TFA-09 : 1800 cfm @ 25 mm WC Static pressure	1	No.		
7.6	TFA-10 : 400 cfm @ 25 mm WC Static pressure	1	No.		
7.7	TFA-11 : 400 cfm @ 25 mm WC Static pressure	1	No.		
8	Bleed off module				
	Bleed Off module consisting of H13 super flow HEPA Filter with GI powder coated perforated Grill for the following sizes				
	670 x 670 mm (Double flange type)	1	No.		
	670 x 365 mm (Double flange type)	2	Nos.		
	365 x 365 mm (Double flange type)	13	Nos.		
9	FILTERS				
9.1	AHU fitted G4 prefilter sealant sealed complete with flange type fixing gadget. (including flange). Size 150 mm thick	240	Sft		
9.2	AHU fitted F7 fine filter sealant sealed complete with flange type fixing gadget. (including flange). Size 300 mm thick	200	Sft		
9.3	AHU fitted SUPER FLOW H13 HEPA filter sealant sealed complete with flange type fixing gadget. (including flange). Size 300 mm thick	25	Sft		
10	Terminal HEPA filter Module, Filter & Grill				
10.1	Supply of HEPA Filter module with Volume Control damper, DOP port, made out of 18 G.G.I. sheet duly epoxy powder coated suitable for fixing the following size HEPA Filters & SS perforated grill. (Room servicable)				
10.1.1	610 x 610 x 150 mm Filter size	40	Nos.		
10.1.2	610 x 305 x 150 mm Filter size	27	Nos.		
10.1.3	305 x 305 x 150 mm Filter size	16	Nos.		
10.2	Super flow H13 HEPA filters of following sizes				
10.2.1	610 x 610 x 150 mm (1000 cfm)	35	Nos.		
10.2.2	610 x 305 x 150 mm (500 cfm)	13	Nos.		
10.2.3	305 x 350 x 150 mm (250 cfm)	15	Nos.		
10.3	16G SS 304 perforated grill suitable for HEPA Module with following filter sizes				
10.3.1	610 x 610 x 150 mm Filter size	40	Nos.		
10.3.2	610 x 305 x 150 mm Filter size	27	Nos.		
10.3.3	305 x 305 x 150 mm Filter size	16	Nos.		
11	Box type F9 filters of following sizes (Aluminium construction)				
	305 x 305 x 150 mm	3	Nos.		

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11.1	Housing for F9 filters similar to HEPA module but with Aluminium Perforated grill for the following filter size				
	305 x 305 x 150 mm Filter size	3	Nos.		
12	Supply / Return Air Grill Module (Classified area)				
12.1	False ceiling suitable supply/return air grill module (suitable to fix perforated grill) made out of 18G GI powder coated sheet with GI collar damper and double skin flexible connetion.	75	Sft		
12.2	16G SS 304 perforated grill suitable for the above mentioned modules	82	Sft		
13	Supply / Return Air Grill Module (Un-Classified area)				
13.1	False ceiling suitable supply/return air grill module (suitable to fix linear bar grill) made out of 18G GI powder coated sheet and double skin flexible connetion.	320	Sft		
13.2	Aluminium linear bar grill with GI collar damper suitable fix in above mentioned modules	340	Sft		
14	Return Air Riser				
14.1	Return air risers made out of 22G GI sheets suitable for fixing module & perforated grill - wall concealed type.	2250	Sft		
14.2	Return air riser module (suitable to fix perforated grill) made out of 18G GI powder coated sheet with GI collar damper & G4 filter	180	Sft		
14.3	SS 304 perforated grill suitable for return air riser module	210	Sft		
15	Dampers				
15.1	Duct mounted CRCA epoxy powder coated opposed blade Volume control damper suitable for supply and return ducts.	92	sft		
15.2	16G GI powder coated fusible link type fire damper at AHU inlet.	61	sft		
16	Ducting				
	Sheet Metal work comprising of G.S.S.(Min 120 GSM GI Sheet) ducting complete with all supports and as per the specification with bolts, nuts neoprene gaskets and sealed with silicon sealant & quantities are as under:				
16.1	24 G GI	30000	sft		
16.2	22 G GI	10000	sft		
17	Duct Insulation				
	Al. foil faced polyethylene insulation for ducting. - Trocellen / Supreme				
17.1	19 mm thick for supply air duct	20000	Sft		
17.2	9 mm thick for return air duct	20000	Sft		
18	Pressure Monitering system				
18.1	Magnetic gauges for rooms with epoxy coated box and SS 304 flush cover with necessary tubings				
	Range : 0-6 mm WC Magnehelic guages	53	Nos		
18.2	Magnehelic gauges for AHUs across G4 & F7 filters				
	Range : 0-25 mm Magnehelic guages	51	Nos		
18.3	Magnehelic gauges for AHUs across H13 filters				
	Range : 0-100 mm Magnehelic guages	1	No		

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19	Chilled Water Manifold for AHUs				
	Chilled Water Manifold size suitable to AHU includes 5 Nos. Butterfly / Ball Valves, 1 No. Balancing valve, 1 No. Y-strainer, 1 No. 3 Way mixing Valve with Actuator (with interconnected wiring between thermostat & mixing valve), 2 Nos. Pressure gauges, 2 Nos. Temperature Gauges (with thermowell), 1 No drain valve without insulation.				
19.1	25 NB Size Manifold	11	Nos.		
19.2	40 NB Size Manifold	9	Nos.		
19.3	50 NB Size Manifold	1	Nos.		
20	Chilled Water Manifold for TFAs				
	Chilled Water Manifold size suitable to TFA includes 5 Nos. Ball Valves, 1 No. Balancing valve, 1 No. Y-strainer, 1 No. 3 Way mixing Valve with Actuator (with interconnected wiring between thermostat & mixing valve), 2 Nos. Pressure gauges, 2 Nos. Temperature Gauges (with thermowell), 1 No drain valve without insulation.				
20.1	25 NB Size Manifold	6	Nos.		
20.2	40 NB Size Manifold	1	Nos.		
21	Hot Water Manifold for AHUs				
	Hot Water Manifold size suitable to AHU includes 5 Nos. Ball Valves, 1 No. Balancing valve, 1 No. Y-strainer, 1 No. 3 Way mixing Valve with Actuator (with interconnected wiring between humidistat & mixing valve), 2 Nos. Pressure gauges, 2 Nos. Temperature Gauges (with thermowell), 1 No drain valve without insulation.				
21.1	25 NB Size Manifold	7	Nos.		
22	Dehumidifier				
	Silica gel type dehumidifiers including heaters in regeneration air flow required for achieving the RH conditions as specified & complete with Humidistat for auto operation and electrical panel with all controls, starters and accessories.. (NFLP Type)				
22.1	DEH-02 (Suitable for AHU-02) Model No : FLP 1000 - Bry Air Make	1	No.		
22.2	DEH-04 (Suitable for AHU-04) Model No : FLP 1000 - Bry Air Make	1	No.		
22.3	DEH-06 (Suitable for AHU-06) Model No : FLP 1000 - Bry Air Make	1	No.		
22.4	DEH-07 (Suitable for AHU-07) Model No : FLP 1000 - Bry Air Make	1	No.		
22.5	DEH-10 (Suitable for AHU-10) Model No : FLP 1500 - Bry Air Make	1	No.		
22.6	DEH-11 (Suitable for AHU-11) Model No : FLP 1500 - Bry Air Make	1	No.		
23	VFD Panels				
	Variable frequency drive for the following AHUs with local AHU panel in 16 G G.I. powder coated construction suitable to house VFD for fan motor of AHUs, control swithcgears with bypass starters. This panel shall be provided with ventilation fan & shall be installed near to AHU.				
23.01	AHU-01 (3.7 KW)	1	No.		
23.02	AHU-02 (2.2 KW)	1	No.		
23.03	AHU-03 (3.7 KW)	1	No.		

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23.04	AHU-04 (1.5 KW)	1	No.		
23.05	AHU-05 (2.2 KW)	1	No.		
23.06	AHU-06 (5.5 KW)	1	No.		
23.07	AHU-07 (3.7 KW)	1	No.		
23.08	AHU-08 (2.2 KW)	1	No.		
23.09	AHU-09 (7.5 KW)	1	No.		
23.10	AHU-10 (3.7 KW)	1	No.		
23.11	AHU-11 (5.5 KW)	1	No.		
23.12	AHU-17 (1.5 KW)	1	No.		
23.13	AHU-18 (1.5 KW)	1	No.		
23.14	AHU-19 (2.2 KW)	1	No.		
23.15	AHU-20 (2.2 KW)	1	No.		
23.1	Static pressure sensor with transmitter suitable for above mentioned VFDs	15	Nos.		
24	Primary Chilled Water Pumps (CHW System)				
	Supply installation testing & commissioning of vertical split casing end suction back pullout type water circulating pump sets integrally coupled with TEFC motor machined base plate, mechanical seal, ribbed rubber pads, clad with Thermocole insulation, air vent, cock, base frame etc. as per specifications and equipment schedule. Pumps shall be selected for working in parallel without over loading. Motor shall be of EF-2 rating.				
24.1	Capacity: 375 US GPM @ 20 meter head (1 Working + 1 StandBy)	2	Nos		
25	Secondary Chilled Water Pumps (VSPS) (CHW System)				
25.1	Supply installation testing & commissioning of vertical split casing end suction back pullout type water circulating pump sets integrally coupled with TEFC motor machined base plate, mechanical seal ribbed rubber vibration isolator clad with Thermacole insulation, air vent, cock baseframe etc. as per specifications and equipment schedule. Pumps shall be selected for working in parallel without over loading. Motor shall be of EF-2 rating.				
25.1.1	Capacity: 375 US GPM @ 40 meter head (1 Working + 1 Standby)	2	Nos		
25.2	Adjustable variable frequency drive suitable for the above mentioned capacities for interfacing with other system components & Auto / Manual changeover arrangement (1 working + 1 stand by)	2	Nos		
25.3	Differential Pressure sensors	2	Nos		
25.4	Microprocessor based logic controller common for above pumps complete with necessary software & wiring.	1	Set		
	Total	1	Set		
26	Condenser Water Pumps				
	Condenser Water Pumps Supply installation, testing & commissioning of vertical split casing end suction back pullout type water circulating pump sets integrally coupled with motor machined base plate, mechanical seal, ribbed rubber pads, priming funnel, ventilation air cock base fame etc. as per specifications and equipment schedule. Inlet and outlet of pumps shall be complete with pressure gauges. Pumps shall be selected for working in parallel without over loading. Motor shall be of EF-2 rating.				

