

Schedule of Quantities

Name of Work: - Provision of Air conditioning in new Class room at DAU , Gandhinagar.

Sr. No.	Description of Item	Qty		Unit	Rate	Amount
		PER	TOTAL			
SH-I	Air Conditioning System					
1	Supply, installation, testing & commissioning of Ceiling Suspended Ductable unit with High COP Inverter/ DX Air Cooled Outdoor Condensing Unit consisting of high performance, low noise, INVERTER/ FIX SPEED scroll compressors, condenser coil, condenser fan, fan motor, microprocessor panel with display, wired remote controller with timed scheduler enclosed in a powder coated sheet metal casing, controlling the supplied indoor units. The unit shall have high static condenser fan. The unit shall have provision for control & monitoring from a central location with BACKNET/LANWORKS protocol, all enclosed in a powder coated sheet metal casing, supporting stand, coil protection mesh, vibration isolation pads, etc. out door unit suitable for 415V for outdoor, suitable for Out doorInstllation , Refrigerant controllers, Tempreature Controler, Change over Timer, Powder Coated stands out door unit, accessories including fully charge refrigerant R410A as per specification only.					
	Supply, Installation, Testing and Comissioning of ceiling Suspended Ductable indoor Unit with Out-door units of following capacity in suitable configurations at design conditions (110/78 deg F) including, Isolation valves, Drier, Expatation Valve, Thermostat, controlling devices and as per Technical specifications with Double Skinned Air Handling Unit. Net Capacity: - Unit will Deliver Capacity @ 41 Deg.C Ambient Condition with inside Condition of 25 Deg C & 50% RH.					
a	3200 CFM @10 mm SP(EXTERNAL). Cooling Capacity 8.5 TR (with Fix Speed Scroll Compressor)	3	18	Set		0.00
b	1500 CFM @10 mm SP(EXTERNAL). Cooling Capacity 5.5 TR (With Inver Scroll Compressor) (Used with TFA , Note If TFA is having Cooling Coil Then No need of Indoor Unit, In that Case Only out door unit rate in Consideration with	1	6	Set		0.00
2	Refrigerant Piping and Insulation					
2.1	Refrigerant Piping					
	SITC of Insulated Refrigerant piping between the indoor units and the outdoor units with minimum pipe thickness of 1.2					
	Refrigerant piping with hard/soft copper tube complete with all accessories & rod supporting work etc. of following capacity.					
	All refrigerant pipes shall be of hard drawn pipes in straight lengths shall be used. Wall thickness of all piping shall be 18 guage, 1.2 mm thick					
	The refrigerant pipes to be laid in a suitable size ladder type cable tray. The price quoted shall also include the cost of the cable tray and the supporting arrangement for the cable tray.					
	Class 'O' Nitrile rubber insulation should be used to insulate the refrigerant pipes .					
	The price quoted shall include cost of refrigerant & oil, necessary supports, supporting tray, pressure testing, vaccumization & commissioning, etc.					
a	8.50 TR System	18	108	Rmt		0.00
b	5.50 TR Dx System	4	24	Rmt		0.00
	Refrigerant Pipe (Copper pipe) Make: - Mandev, RR, Rajco.					
2.2	Commissioning of System with Vacuumizing and 1st Charge of Refrigerant					
a	8.5 Tr	3	18	Job		0.00
b	5.5 Tr	1	6	Job		0.00
2.3	Insulated UPVC Drain Piping					

	SITC of Insulated Drain piping between the Air Handling units/AC Unit and nearest suitable drain Point with UPVC Pipe & UPVC Fitting. The Route length of drain piping shall be as per the drawings furnished. The price quoted shall include 6 mm Class O Insulation, accessories, hardwares, support system for required for leak proof piping work . Make: Suprim /Astral					
a	15 mm Dia		50	Rmt		0.00
b	25 mm Dia	9	204	Rmt		0.00
c	32 mm Dia			Rmt		0.00
d	40 mm Dia	12	72	Rmt		0.00
3	SITC of G.I. Sheet Metal Duct Work As Per IS-655made out from 120GSM Sheet. Make: Jindal, Tata, Essar					
3.1	Supply, installation, testing & commissioning of G.I. Sheet Metal Duct (Rectangular)					
a	0.63 MM (24G)	70	420	MT ²		0.00
b	0.80 MM (22G)	30	180	MT ²		0.00
3.2	Supply, installation, testing & commissioning of Powder Coated Extruded Aluminium Linear Grilles of required Airflow Angles with VCD . Make : CaryAire, Air Master, Cosmos,					
a	Supply, installation, testing & commissioning of Aluminium Linear Grilles in any size without VCD	10	60	MT ²		0.00
b	Supply, installation, testing & commissioning of Aluminium Linear Grilles in any size with VCD	3	18	MT ²		0.00
3.3	Double Canvass with Zip For Ductable unit and TFA, Circuller Fan ETC	8	48	Nos.		0.00
3.4	Supply, installation, testing & commissioning of Aluminium Aerofoil sectional Diffuser with dampers of following size					
a	595 x 595 mm (Grid Diffuser)	12	72	Nos.		0.00
4	Supply, installation, testing & commissioning of motorised fire & smoke dampers with actuators in supply / return air duct / path of conditioned air in AHU rooms. Fire dampers shall be complete with in-built temperature and smoke sensors and auxiliary switch to trip the AHUs and close the dampers simultaneously. These dampers shall also actuate in response to signal from central smoke alarm system which shall trip the AHU along with closing the damper. Testing of fire dampers shall be as per UL 555 and certified by CBRI. Annular space / Gap around ducting, between ducting & fire damper and around fire damper shall be sealed to make it air tight by Hilti make Fire stop mortar, CP 636 or equivalent other material. ~~SIZE OF FIRE DAMPER as per duct size~~	1.2	7.2	MT ²		0.00
5	Supply, installation, testing & commissioning of volume dampers with locking arragment in supply / return air duct / path of conditioned air.	1.2	7.2	MT ²		0.00
6	Duct Insulation Work Make: Armacell, ArmaFlex, Superloan		0			
a	Supply, installation, testing & commissioning of 13-15 mm Thick Duct acoustic insulation with Opencell Insulation from the inside of the duct as per specifications. First 3.0 Mt from Discharge of Air handling Unit 13 MM THICK (Minimum)	40	240	MT ²		0.00
b	Supply, installation, testing & commissioning of 13 mm Thick Thermal insulation of Ducts with Close Cell Nitrile on the duct surface area as per specifications.	50	300	MT ²		0.00
	Supply, installation, testing & commissioning of 10 mm Thick Thermal insulation of Ducts with Close Cell Nitrile on the duct surface area as per specifications.	2	12	MT ²		0.00
7	Supply of following size XLPE insulated PVC sheathed Aluminium conductor armoured power Copper cable of 1.1 KV grade		0			
a	4C x 6 sq. mm.	70	420	Mtrs.		0.00
b	4C x 4 sq. mm.	8	48	Mtrs.		0.00
c	5Cx1.5 Sq,mm (As per requirement of Control wiring)	55	330	Mtrs.		0.00
d	2xx1.0 Sq.mm (for Thermostate)	55	330	Mtrs.		0.00
8	SITC of G I 16 G Earthing wire between HVAC Control Panel and HVAC Equipements	55	330	Mtrs.		0.00
9	SITC of Cable Tray 150 MM	15	90	Mtrs.		0.00

9	SITC of HVAC Control & Power Panel for AHU with start / stop push button . The Panel will have Drawing Folder Provision. The Panel to be Fabricated from 16swg sheet duly powder coated of RAL Shade 7032, including required internal control cabling & ON/OFF / TRIP Indication. Panel should have provision for interlocking with AHU's Fan Starter with DX Condensing Unit & AHUs with MCB of Suitable Range as Isolator, contactor, thermal relay etc.	1	3			
	Each panel is Capable to contro (required all Control and power Internal wiring, Contactor,Relay MCB etc)I HVAC System in 1. Six Set of DSU(3200 CFM@12mmSp) Fan with 8.5 DX Unit 2. Two Set of TFA(1500 CFM@10mmSp) WITH 5.5 Tr DX unit . 1Phase Power Point with switch For Service . Panel to be madeafter Approval of Drawing from EIC/Consultant.	1	3	Nos.		0.00
10	M.S. Fabrication work For Instlation of HVAC equipments As per Site Requirements in Consultation with EIC ,Consultant.	100	600	KG		0.00
11.0	Treated Fresh Air Unit					
	Supply, Installation, testing and commissioning of Ceiling mounted Treated Fresh Air Unit. consisting of Tube Type Heat Exchanger, Fresh Air Fena having 1500 CFM ,Exhaust Air Fan 1500 CFM Fresh Air Filter .operation on 1-phase, 230 volts, 50 Hz AC supply (or as per OEM). including mounting unit from the ceiling with suitable brackets/ tie rod as per standard practice in the industry, as required.	1	6	Each		0.00
12	Supply of 2.0 TR (or as per OEM) capacity having nominal cooling capacity of minimum 24000 BTU/Hr. suitable for operation on single phase, 230 volts, 50 Hz AC supply (or as per OEM) High wall Split type Airconditioners not less than 5 star rating copper coil, inverter type fitted with extra powerful rotory/ reciprocating compressors, including remote, regfrigerant R-32/ non CFC suitable for wall mounting confirming to IS 1391/ Part – 21/92 Amdt. No. 1 (except power consumption norms) with 10 feet copper refrigeration pipes and suitable copper cable and having features like auto air swing(2 way swing), speed setting(3/3), operation control (electronic), auto restart, on timer, evaporator type (2 bend eva) and capable of performing:- (a) Cooling (b) Dehumidifying. (c) Air-circulating (d) Filtering (anti-bacteria). Net Capacity: - Unit will Deliver Capacity of minimum 1.8 TR @ 41 Deg.C Ambient Condition with inside Condition of 25 Deg C & 50% RH. Make: Blue Star, Mitsubishi, Daikin	2	2	Each		0.00
13	Supply of 1.5 TR (or as per OEM) capacity having nominal cooling capacity of minimum 18000 BTU/Hr., minimum 400 CFM suitable for operation on single phase, 230 volts, 50 Hz AC supply (or as per OEM) High wall Split type Airconditioners not less than 5 star rating copper coil, inverter type fitted with extra powerful <i>rotory/ reciprocating</i> compressors, including remote, regfrigerant R-32/ non CFC suitable for wall mounting confirming to IS 1391/ Part – 21/92 Amdt. No. 1 (except power consumption norms) with 10 feet copper refrigeration pipes and suitable copper cable and having features like auto air swing(2 way swing), speed setting(3/3), operation control (electronic), auto restart, on timer, evaporator type (2 bend eva) and capable of performing:- (a) Cooling (b) Dehumidifying. (c) Air-circulating (d) Filtering (anti-bacteria). Net Capacity: - Unit will Deliver Capacity @ 41 Deg.C Ambient Condition with inside Condition of 25 Deg C & 50% RH. ~~Make: Blue Star, Mitsubishi, Daikin~~	2	2	Each		0.00

14	Supply of 1.0 TR (or as per OEM) capacity having nominal cooling capacity of minimum 12000 BTU/Hr., minimum 400 CFM suitable for operation on single phase, 230 volts, 50 Hz AC supply (or as per OEM) High wall Split type Airconditioners not less than 5 star rating copper coil, inverter type fitted with extra powerful <i>rotary/ reciprocating</i> compressors, including remote, regfrigerant R-32/ non CFC suitable for wall mounting confirming to IS 1391/ Part – 21/92 Amdt. No. 1 (except power consumption norms) with 10 feet copper refrigeration pipes and suitable copper cable and having features like auto air swing(2 way swing), speed setting(3/3), operation control (electronic), auto restart, on timer, evaporator type (2 bend eva) and capable of performing:- (a) Cooling (b) Dehumidifying. (c) Air-circulating (d) Filtering (anti-bacteria). Net Capacity: - Unit will Deliver Capacity @ 41 Deg.C Ambient Condition with inside Condition of 25 Deg C & 50% RH. ~~Make: Blue Star, Mitsubishi, Daikin~~	10	10	Each		0.00
15	Installation, Testing & commissioning of A/C units as mentioned in item no- 12,13&14 which includes mounting of indoor & outdoor unit including supply and fixing of MS stand at their respective location along with laying of refrigerant pipeline with insulation & flexible PVC covering pipe up to standard length supplied with the unit , connecting both the units , leak testing of entire system, connecting both indoor and outdoor units with three core 2.5 sq mm PVC insulated flexible copper cable supplied with the unit, top up of refrigerant (if required), minor civil repairing work as per site requirement complete as required.	14	14	Job		0.00
16	Providing & fixing of suitable size Copper Refrigerant piping suitable for R-32 (supply and return) refrigerant with expanded polythene foam insulation tubing with flexible PVC covering pipe for split type air conditioners as required. (Measurement of 1 Running mtr. will include both supply & return Cu. Piping with insulation excluding standard length supplied by OEM with AC unit). Refrigerant Pipe (Copper pipe) Make: - Mandev, RR, Rajco.	180	180	Mtr.		0.00
16	Supply & fixing of 3 core, 2.5 sq mm size copper conductor flexible cable for the interconnections between indoor & outdoor units of approved make complete as required at site. (Measurement excluding standard length supplied by OEM with AC unit).	200	200	Mtr.		0.00
19	Supply & fixing of Circuller Inline Fan with 800 CFM @6 mm SP for Toilet Block Ventilation Make : Cary Air/krugger/AirFlow	6	6	Mtr.		0.00
	TOTAL (A)					0.00
	GST @ 18% ON 'A'					0.00
	TOTAL					0.00
	SAY Rs.					0.00

Rupees

Note :- Once the vendor is finalized, they can proceed with the approved design and submit the shop drawings for execution