

BILL OF QUANTITIES OF HVAC WORKS GIMS ACADEMIC BLOCK						
Item No.	Description	Capacity	Qty	Unit	Rate(Rs)	Amount (Rs)
	Supply of following State of Art, Latest Technology , More Energy Saving , Air Cooled , ALL DC VRF equipment / system to be Connected to PHOTOVOLTAIC inverter system with Direct Connectivity with DC & AC power supply complete with standard Components , Controls & Safety Devices to make system Fully Automated.					
1	INDOOR UNITS					
	ALL DC VRF DX Indoor A/C units with Electronic Expansion Devices , controls, thermostat and accessories / fittings etc	USRT				
A	Decorative 4-way cassette					
		1.25	16	No		
		1.5	31	No		
		2	51	No		
		3	92	No		
		3.5	79	No		
		4	14	No		
B	Branch Connectors/Y Joints					
			37	No		
			54	No		
			96	No		
			60	No		
			18	No		
2	ALL DC VRF Out Door Condensing Units					
A	ALL DC VRF outdoor units (Condensing Units) with Built in 710 KW PHOTOVOLTAIC inverter with Direct Connectivity with DC & AC Power Supply, floor standing, Vertical Discharge with all standard controls, safeties & accessories etc.Suitable for HIGH Ambient Conditions (52 CDB)	USRT				
a	Air-cooled Condensing Unit / CU-GF-01	47.1	1	No		
b	Air-cooled Condensing Unit / CU-GF-02	51.4	1	No		
c	Air-cooled Condensing Unit / CU-GF-03	50	1	No		
d	Air-cooled Condensing Unit / CU-GF-04	24.3	1	No		
e	Air-cooled Condensing Unit / CU-GF-05	37.1	1	No		
f	Air-cooled Condensing Unit / CU-GF-06	51.4	1	No		
g	Air-cooled Condensing Unit / CU-1F-01	41.6	1	No		
h	Air-cooled Condensing Unit / CU-1F-02	51.4	1	No		
i	Air-cooled Condensing Unit / CU-1F-03	35.3	1	No		
j	Air-cooled Condensing Unit / CU-1F-04	37.1	1	No		
k	Air-cooled Condensing Unit / CU-1F-05	43.2	1	No		
l	Air-cooled Condensing Unit / CU-1F-06	51.4	1	No		
m	Air-cooled Condensing Unit / CU-1F-07	41.6	1	No		
B	Latest VRF All DC Inverter Condensing Units with built-in energy savng mode, with all standard accessories, controls, safeties & fittings.System should be able to operate upto 52C					
n	Air-cooled Condensing Unit / CU-1F-08	44.9	1	No		
o	Air-cooled Condensing Unit / CU-2F-01	44.9	1	No		

Item No.	Description	Capacity	Qty	Unit	Rate(Rs)	Amount (Rs)
p	Air-cooled Condensing Unit / CU-2F-02	51.4	1	No		
q	Air-cooled Condensing Unit / CU-2F-03	41.6	1	No		
r	Air-cooled Condensing Unit / CU-2F-04	44.9	1	No		
s	Air-cooled Condensing Unit / Reception-admin	16	1	No		
C	Branch Connectors/Y Joints		55	No		
3	Supply of CASSETTE type fixed speed reversible Heat pump split air conditioners	2 TR	6	No		
		TOTAL COST				
		GST @17 %				
		G.TOTAL COST with 17 % GST				

4	Installation , Rigging, Shifting and Placement of following equipment / items and materials as per drawings & site Requirement & as per International Engineering Standards					
A	ALL DC VRF DX Indoor A/C units with Electronic Expansion Devices , controls, thermostat and accessories / fittings etc	USRT				
	Indoor Decorative 4-way cassette Type Units					
		1.25	16	No		
		1.5	31	No		
		2	51	No		
		3	92	No		
		3.5	79	No		
		4	14	No		
B	Branch Connectors/Y Joints		1	Lot		
5	ALL DC VRF Out Door Condensing Units					
A	ALL DC VRF outdoor units (Condensing Units) with Built in 710 KW PHOTOVOLTAIC inverter with Direct Connectivity with DC & AC Power Supply, floor standing, Vertical Discharge with all standard controls, safeties & accessories etc.Suitable for HIGH Ambient Conditions (52 CDB)	USRT				
a	Air-cooled Condensing Unit / CU-GF-01	47.1	1	No		
b	Air-cooled Condensing Unit / CU-GF-02	51.4	1	No		
c	Air-cooled Condensing Unit / CU-GF-03	50	1	No		
d	Air-cooled Condensing Unit / CU-GF-04	24.3	1	No		
e	Air-cooled Condensing Unit / CU-GF-05	37.1	1	No		
f	Air-cooled Condensing Unit / CU-GF-06	51.4	1	No		
g	Air-cooled Condensing Unit / CU-1F-01	41.6	1	No		
h	Air-cooled Condensing Unit / CU-1F-02	51.4	1	No		
i	Air-cooled Condensing Unit / CU-1F-03	35.3	1	No		
j	Air-cooled Condensing Unit / CU-1F-04	37.1	1	No		
k	Air-cooled Condensing Unit / CU-1F-05	43.2	1	No		
l	Air-cooled Condensing Unit / CU-1F-06	51.4	1	No		
m	Air-cooled Condensing Unit / CU-1F-07	41.6	1	No		

Item No.	Description	Capacity	Qty	Unit	Rate(Rs)	Amount (Rs)
B	Latest VRF All DC Inverter Condensing Units with built-in energy saving mode, with all standard accessories, controls, safeties & fittings. System should be able to operate upto 52C					
n	Air-cooled Condensing Unit / CU-1F-08	44.9	1	No		
o	Air-cooled Condensing Unit / CU-2F-01	44.9	1	No		
p	Air-cooled Condensing Unit / CU-2F-02	51.4	1	No		
q	Air-cooled Condensing Unit / CU-2F-03	41.6	1	No		
r	Air-cooled Condensing Unit / CU-2F-04	44.9	1	No		
s	Air-cooled Condensing Unit / Reception-admin	16	1	No		
B	ODU Joints		1	Lot		
6	CASSETTE type fixed speed reversible Heat pump split air conditioners	2 TR	6	No		
7	Supply & Installation of SEAMLESS ,Best Quality Copper Pipes & Fittings L or K type with all accessories / hanging Supports/hanging frames etc as per Engineering Practice.					
a	Refrigerant pipe with all fittings and installation	Φ54.1 (2-1/8")	1,310	RFT		
b	Refrigerant pipe with all fittings and installation	Φ44.5 (1-3/4")	1,150	RFT		
c	Refrigerant pipe with all fittings and installation	Φ41.3 (1-5/8")	1,150	RFT		
d	Refrigerant pipe with all fittings and installation	Φ34.9 (1-3/8")	850	RFT		
e	Refrigerant pipe with all fittings and installation	Φ28.6 (1-1/8")	1,600	RFT		
f	Refrigerant pipe with all fittings and installation	Φ25.4 (1")	1,310	RFT		
g	Refrigerant pipe with all fittings and installation	Φ22.2 (7/8")	1,960	RFT		
h	Refrigerant pipe with all fittings and installation	Φ19.1 (3/4")	2,320	RFT		
i	Refrigerant pipe with all fittings and installation	Φ15.9 (5/8")	4,250	RFT		
j	Refrigerant pipe with all fittings and installation	Φ12.7 (1/2")	880	RFT		
k	Refrigerant pipe with all fittings and installation	Φ9.52 (3/8")	4,580	RFT		
l	Refrigerant pipe with all fittings and installation	Φ6.35(1/4")	260	RFT		
8	Supply & installation of Pre-Molded Best Quality CLOSED CELL 1/2 " Thick Foam Insulation for Copper Piping to protect from Sweating etc as per Engineering Practice.					
	Sizes:	Φ54.1 (2-1/8")	1,310	RFT		
		Φ44.5 (1-3/4")	1,150	RFT		
		Φ41.3 (1-5/8")	1,150	RFT		
		Φ34.9 (1-3/8")	850	RFT		
		Φ28.6 (1-1/8")	1,600	RFT		
		Φ25.4 (1")	1,310	RFT		
		Φ22.2 (7/8")	1,960	RFT		
		Φ19.1 (3/4")	2,320	RFT		
		Φ15.9 (5/8")	4,250	RFT		
		Φ12.7 (1/2")	880	RFT		
		Φ9.52 (3/8")	4,580	RFT		
		Φ6.35(1/4")	260	RFT		
9	Condensate drain piping UPVc s with 1/2" thick armafex insulation or equivalent.	1.5 "	6,550	RFT		
		1.0"	4,900	RFT		

Item No.	Description	Capacity	Qty	Unit	Rate(Rs)	Amount (Rs)
10	Supply and Installation of 18 Gauge G.I Cable Tray for Copper Pipes & Cables etc.	18" x 6"	820	RFT		
11	Supply & Installation of 3/4 core 16 mm square PVC/PVC Copper conductor Power Cable for each VRF System, Condensing units,AHUs etc.	16mm2 (4core)	1,650	RFT		
12	Supply & Installation of 3/4 core 10 mm square PVC/PVC Copper conductor Power Cable for each VRF System, Condensing units,AHUs etc.	10mm2 (4core)	1,650	RFT		
13	Supply & Installation of 3/4 core 06 mm square PVC/PVC Copper conductor Power Cable for each VRF System, Condensing units,AHUs etc.	6mm2 (3core)	11,440	RFT		
14	Earth wiring	2.5mm2	11,440	RFT		
		10mm2	2,950	RFT		
15	Communication wiring					
	Supply & Installation of Communication wiring from outdoor relevant unit to each indoor unit. Sheilded wire 2 core 0.75 sqmm in cable tray/ PVC pipe/Conduit.	0.75mm2	13,100	RFT		
16	Supply & Installation of HVAC Electrical panels					
a	DB-01 at rooftop for Condensing units		5	No		
17	Construction of Foundations for all VRF Out Door Condensing Units etc		1	Job		
18	Proper Wall Openings , Beam Cutting and other holes for Copper piping & Ducts etc.		1	Job		
19	Preparation of Shop Drawings for all Floors		1	Job		
20	Preparation of As Built Drawings Hard Copy & in CD		1	Job		
21	Testing , Commissioning & Start of All Equipment & System including Additional R-410a Refrigerant Charging in Circuit .		1	Job		
TOTAL COST						
SST @13 %						
G.TOTAL COST with 13 % SST						

Note : The above mentioned **Capacity required at 50 CDB ambient** Temperature.
All Power supply to Contractor DBs / Panels Shall be arranged by GIMS.