

SCHEDULE OF REQUIREMENT/ BILL OF QUANTITIES (BOQ) OF**SHAHEED MOHTARMA BENAZIR BHUTTO INSTITUTE OF
TRAUMA(SMBBIT), KARACHI****“PROCUREMENT OF GENERAL ITEMS & MACHINERY PARTS &
CONSUMABLES”****Tender Ref. #: PROC/SMBBIT/(P&M-04)/2022-23”****SECTION A: ASSET NAME: 3000L AIR RESERVOIR MODEL # Y3002 SERIAL # AIR-AZOTE-ARGON-CO2 / (2)**

S #.	Items Description	Specification / Part Ref. #	Req. Qty.	UOM	Unit Price	Total Price
1	Compressed Air Filter (Line Filter)	G1210MX-AD-SG-W-02	2	Nos.		

SECTION B: ASSET NAME: AIR COMPRESSOR (HITACHI) MODEL #11OP-8.5CGA SERIAL # TG32080

1	Air Filter	-	12	Nos.		
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SECTION C: ASSET NAME: 0,58KW REFRIGERATED AIR DRYER (F0032S) MODEL # ZS1155746 SERIAL # 399440440002

1	Line Filter (Pre & After Filter)	-	3	Nos.		
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SECTION D: ASSET NAME: REFRIGERATED AIR DRYER MODEL # DX-3XD

1	Line Filter (Pre & After Filter)	-	3	Nos.		
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SECTION E: ASSET NAME: VACUUM PUMP MODEL # E400.2 MV SERIAL # 1400188

1	Hydraulic Transmission / Oil Filter	(4011558712105) 93x62x71 3/4-16 UNF	4	Nos.		
2	Lubrication Oil (Vacuum Pump Oil)	Caltex 68	208	ltr.		
3	Exhaust Filter	30"	2	Nos.		
4	Oil Mist Filter	-	12	Nos.		
5	MCB Breaker (Schneider) 3-Pole	25A	2	Nos.		
6	Contactor 3-Pole	LC1D18	6	Nos.		
7	Timer	230V, (TA23) 50HZ, (KRONOS)	2	Nos.		
8	Timer	TS60 120 VDC Switch depth behind plate: 2- 1/4"	2	Nos.		
9	Timer	Switch time repeatable +/- 10%	2			
10	Phase Voltage	ENITHPHEH	1	Nos.		
11	Overload 3-Pole	LRD 21 Schneider	2	Nos.		
12	Breaker (Schneider) Single Pole	10A Schneider	8	Nos.		

S #.	Items Description	Specification / Part Ref. #	Req. Qty.	UOM	Unit Price	Total Price
13	Selector Switch	2-Way Selector 10A (TS-EN60947-3), CE (IEC 609*47-3)	2	Nos.		
14	Selector Switch	ABB (ON/OFF) (OT63F3)	1	Nos.		
15	Fuse	50A, 500AC (ELMARK)	3	Nos.		
16	DATA Cable 000786	PVC80C 300V	5	meter		
SECTION F: ASSET NAME: 75KW COMPAIR COMPRESSOR MODEL # L80						
1	MLS Drive	MLS SCWG4000-120	4	Nos.		
2	Drive Cell (Lithium Battery)	CR2450 3V	12	Nos.		
3	Multi-Purpose Grease	SCWG4000-120 COMPAIR MLS GREASE 120	2	Kg.		
4	MCB Card (HMI)		2	Nos.		
5	Jaw Coupling Rotex	100005644 55 St	2	Nos.		
6	Contactor	3RT5054-1AP36 220V	2	Nos.		
7	Power Transformer	INPUT 0 360 380 400 415 435 V OUTPUT 230V/1.13 24V/2.083A	2	Nos.		
8	Pneumatic Pipe Transparent	8mm -40 C to + 80 C 18~32 bar	60	meter.		
9	Pneumatic Pipe Transparent	4mm -40 C to + 80 C 18~32 bar	60	meter.		
10	Pneumatic Pipe Transparent	6mm -40 C to + 80 C 18~32 bar	60	meter.		
11	Flexible temperature sensors	(Danfoss) MBT 3270	2	Nos.		
12	Oil Level Indicator Glass	Transparent	2	Nos.		
13	Solenoid Valve	6014 C 1/16 FKM BR 00463880 232PSI	2	Nos.		
14	O-Ring	2mm	250	Nos.		
15	O-Ring	8mm	250	Nos.		
16	O-Ring	10mm	250	Nos.		
17	O-Ring	12mm	250	Nos.		
18	O-Ring	30 Size	1	Ket		
19	Socket (With Washer, Nut & Screw)	13A 250V	100	Nos.		
20	Pneumatic Pipe	4mm	100	meter.		

S #.	Items Description	Specification / Part Ref. #	Req. Qty.	UOM	Unit Price	Total Price
21	Quick Fitting (SS) connector	1/8"x 4mm	60	Nos.		
22	Quick Fitting (SS) L-Bow	3/8" x 8mm	80	Nos.		
23	Quick Fitting L-Bow (Two Side)	4mm x 4mm	60	Nos.		
24	Quick Fitting (SS) connector	1/4" x 8mm	60	Nos.		
25	Quick Fitting (SS) Connector	1/8"x 8mm	60	Nos.		
26	HMI DELCOSE XL-L	ZS1057856	2	Nos.		
27	Emergency Switch	A030750 IDEC 631 AVW	2	Nos.		
28	MCB Breaker Single Pole	5SJ61-C1 230/400V	2	Nos.		
29	MCB Breaker 2-Pole	5SJ72-6A 400V 6A	2	Nos.		
30	Breaker	690V, 63A, 3VU1340, 1MK00	2	Nos.		
31	Contactor 3-Pole	3RT6023-1AL20 AC 230 V 50/60 HZ AC3 4 kW 400 V	2	Nos.		
32	Contactor 3-Pole	3RH5921-1EA11, 2- pole	2	Nos.		
33	Power Transformer	INPUT 0 360 380 400 415 435 V OUTPUT 230V/1.13 24V/2.083A	2	Nos.		
34	Main Contactor	3RT5054-1...6 140A 600V	4	Nos.		

SECTION G: ASSET NAME: REFRIGERATION DRYER MODEL # DC1350AX SERIAL # 134/22229/01

1	Direct Acting Solenoid Valve	740-00-555 230V 50- 60hz 3/8" #13H53	2	Nos.		
2	PCB Card	-	1	Nos.		
3	Electronic Condense drain	ECD 15B 230V	8	Nos.		

SECTION H: ASSET NAME: AIR COMPRESSOR (HITACHI) MODEL # 11OP-8.5CGA SERIAL # TG32080

1	V-Belt	B-108 (Oil & Heat)	12	Nos.		
2	HMI	DOP-B07S411	1	Nos.		
3	Inverter	-	2	Nos.		
4	Exhaust Fan	6X6 AC 220/240	4	Nos.		
5	Push Button Switch	ZB2-BE102C AC220/240	4	Nos.		
6	Breaker (Schneider)	C6 220/240 Single Pole	8	Nos.		
7	MCB Breaker (Schneider)	C25 220/240 3- Pole	4	Nos.		
8	MCB Breaker (Schneider)	C25 220/240 3- Pole	4	Nos.		
9	Contactor	40A 3-Pole	4	Nos.		
10	Power Supply (TRACO POWER)	TSL-030-124	2	Nos.		

S #.	Items Description	Specification / Part Ref. #	Req. Qty.	UOM	Unit Price	Total Price
11	Delta PLC MODULE	DVP-32EH	1	Nos.		
12	Electromagnetic Relay	24VDC 2-Pole	5	Nos.		
SECTION I: ASSET NAME: AIR RESERVOIR						
1	Ball Valve (SS) DN25	1" Ketz 316	4	Nos.		
2	2way Solenoid Valve	1/4" (UD-8) UNI-D	4	Nos.		
3	Pressure Gauge	0-100 kPa	4	Nos.		
4	Pressure Switch	0-7.5 Bar	4	Nos.		
5	Pneumatic Pipe	6mm -40 C to + 80 C 18~32 bar	100	meter		
6	Pneumatic Pipe	4mm -40 C to + 80 C 18~32 bar	100	meter		
7	Ball Valve (SS) DN15	1/2" Ketz 316	4	Nos.		
8	Pressure Gauge	0-150 PSI	8	Nos.		
9	Direct Acting Small NC Magnetic Valves	1/4" 2W-025-08 AC 220V	4	Nos.		
SECTION J: ASSET NAME: DUPLEX AGSS (DISPOSAL SYSTEM)						
1	Blower with Motor (BUSCH)	1.5 KW, 205HP, 2800RPM	2	Nos.		
2	Bearing	6205Z	4	Nos.		
3	Oil Seal	FP-36 (30 42 07)	6	Nos.		
SECTION K: ASSET NAME: BOOSTER PUMP						
1	LED Panel	Simatic Panel Touch- KTP600 Basic PN Mono(6AV6 647-0 AB11-3AX0)	2	Nos.		
2	Power Supply (AB) Quality Allen Bradley	1606-XLE 120EE, AC- 200/240 Volt/DC24V/5A	2	Nos.		
3	Relay	Comat Swiss-DC24V	3	Nos.		
4	Contactor 3-Pole	AB K40E	2	Nos.		
5	Contactor 3-Pole	AB K05	2	Nos.		
6	Module (Siemens)	S7-1200	2	Nos.		
7	Overload 3-Pole	3ZX1012-0RW40- 2DA1	2	Nos.		
8	Breaker 3-Pole	AB-140M-C2T	2	Nos.		
9	Breaker 3-Pole	NCN 316	2	Nos.		
10	Breaker 1/2 Pole	NCN 013 C13	2	Nos.		
11	ON/OFF Switch Schneider	IEC/EN 60947- 3,25A,15KW	2	Nos.		
12	Module Part	Simatic S7-1200, S- ZVDNYAN015589/SM- 1231-A1	4	Nos.		

SECTION L: TOOLS FOR MECHANICAL WORKSHOP.

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
1	Pedestal Drill Machine	Frequency: 50/60 Hz Distance Between Center of Spindle to Column Front: 200 mm Drilling Capacity In Steel: 20 mm Feed: Hand Max Distance Between Spindle to Base: 600 mm Max Distance Between Spindle to Table: 300 mm	1	Nos.		
2	Pedestal Grinding Machine	Power Consumption 0.75 hp Phase 3 Phase Voltage 415V Speed 3000 RPM Wheel Diameter 200 mm	1	Nos.		
3	Heavy Grinder	7" Angel Grinder	1	Nos.		
4	Baby Grinder	4" Angel Grinder	1	Nos.		
5	LT Drill machine	-	1	Nos.		
6	Electric Drill Machine	-	1	Nos.		
7	Table Vice 24"	-	1	Nos.		
8	Table Vice Pipe Holding	-	1	Nos.		
9	Mini Table Vice 6"	-	1	Nos.		
10	Portable Welding Plant	130A Welding Machine, 3 in 1 Combo MMA/MIG/LIFT TIG Welder Machine, Flux Core Welder, MIG-130	1	Nos.		
11	LT Drill Machine	26mm Hammer Hilty/ Drill Machine - With Box	1	Nos.		
12	Electric Drill Machine	Electric Drill Machine 10mm	1	Nos.		
13	Table Vice	Heavy Duty 12"/300mm	1	Nos.		
14	Table Vice Pipe Holding	2x 1/2"	1	Nos.		
15	Mini Table Vice	Mini Bench Vice Clamp 4"	1	Nos.		
16	Rivet Gun With Pins	-	1	Nos.		
17	Mini Bend saw Machine	Light Duty	1	Nos.		
18	Electric Blower	-	1	Nos.		

SECTION M: 500 KG ELECTRIC BOILER PARTS / CONSUMABLES

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
1	Heater with Flange 6PCD	316SS, HS, 380V, 24KW, (15,9,60) (LWH)	9	Nos.		
2	Teflon Sheet	5mm, 50" x 50"	2	Nos.		

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
3	Stainless Steel Bolt	12 x 30 x 1.75	100	Nos.		
4	AC Contactor	AC Contactor, 20A	4	Nos.		
5	AC Fan	12V, 6" x 6"	4	Nos.		
6	Ampere Meter	0 – 400	2	Nos.		
7	Volt Meter	0 – 450	2	Nos.		
8	Heat Proof Cable	8mm	20	Meter		
9	Emergency Switch	No / NC	4	Nos.		
10	Push Button	Yellow	2	Nos.		
11	Push Button	Green	2	Nos.		
12	Push Button	Red	2	Nos.		
13	OCR	3A, 380V	2	Nos.		
14	Indication Light	Yellow	2	Nos.		
15	Indication Light	Green	2	Nos.		
16	Indication Light	Red	2	Nos.		
17	Relay	3A, 250V, Omron MY2N – J	2	Nos.		
18	HCL	-	20	Ltr.		
19	Cable Tie	16"	2	Packet		
20	Insulation Tape	Red, Blue, Green	5	Each		

SECTION N: OXYGEN GENERATION PLANT ROOM TOOLS FOR DEPARTMENT

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
1	Measuring Tape	10 Meter	3	Nos.		
2	Screw Driver	(+ , -)	3	Set.		
3	Screw Driver	Hammer Type (+ , -)	2	Set.		
4	Oil Cane	-	5	Nos.		

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
5	Ring Spanner (Taparia)	6 – 32mm	2	Set.		
6	Box Spanner (Taparia(=))	6 – 32mm	2	Set.		
7	Combination Wrench (Force 5191C)	6 – 32mm	1	Set.		
8	Adjustable Spanner	6"	4	Nos.		
9	Adjustable Spanner	12"	4	Nos.		
10	Allen Wrench (Short Type)	(TEKTON)	3	Set.		
11	Adjustable Screw Wrench	(TOPTUL) 10"	4	Nos.		
12	Combination Pliers (Taparia)	8"	3	Nos.		
13	Pipe Wrench (Forged)	6"	3	Nos.		
14	Pipe Wrench (Forged)	24"	3	Nos.		
15	Pipe Wrench (Forged)	36"	2	Nos.		
16	Pipe Wrench (Forged)	18"	2	Nos.		
17	Cutting Plier (Taparia)	6"	5	Nos.		
18	Long Nose Plier (Taparia)	-	5	Nos.		
19	O – Ring Kit Box	30 Size	2	Kit		
20	Electric Heat Gun	-	2	Nos.		
21	Hose Pipe	8mm	100	Meter		
22	Star L – N Key	-	3	Set		
23	Multi Meter (Digital)	Voltage DC + - (0.09% + 2), Max.Res 0.mv, Max 1000V	2	Nos.		
24	Clamp Meter	AC – 4A / 400A, DC – 600V	2	Nos.		
25	Megger Meter	50V, 100V, 250V, 500V, 1000V	2	Nos.		
26	Flat Screw Driver	Complete	1	Set		
27	Philip Screw Driver	Complete	1	Set		
28	Sata Electrical Tool	Complete	1	Set		
29	Plier	Complete	1	Set		

S. #.	Items Description	Specification	Req. Qty.	UOM	Unit Price	Total Price
30	Cutter Plier	-	2	Nos.		
31	Nose Plier	-	2	Nos.		
32	Grip Plier	-	4	Nos.		
33	Knife Cutter	-	5	Nos.		
34	Soldering Iron	-	3	Nos.		
35	Welding Face Shield	-	2	Nos.		
36	Belt Spanner	9" Belt Type Oil Filter Wrench	3	Nos.		
37	Chain Spanner	Chain Wrench Filter 9"	4	Nos.		
38	Hammer	2 – 4 Pond	4	Nos.		
39	Bearing Puller	Complete	2	Set		
40	Gasket Cutter	-	3	Nos.		
41	Meter Sheet Cutter	-	2	Nos.		
42	C – Clamp	3", 4", 5", 7", 9"	2	Set.		
43	Hand Tap with Handel	4mm	2	Set.		
44	Hand Tap	5mm	2	Set.		
45	Hand Tap	6mm	2	Set.		
46	Hand Tap	8mm	2	Set.		
47	Hand Tap	10mm	2	Set.		
48	Hand Tap	12mm	2	Set.		
49	Drill Bit – HSS – G	1 – 13mm	2	Set.		

S. #.	Items Description	Req. Qty.	UOM	Unit Price	Total Price
SECTION O: OTHER MISCELLANEOUS ITEMS					
1	Laryngoscope (Pediatric)	3	Nos.		
2	Laryngoscope (Adult)	1	Nos.		

S. #.	Items Description	Req. Qty.	UOM	Unit Price	Total Price
3	Gel Mattress for HDU and ICU Beds.	15	Nos.		
4	Patient Bed Mattress for HDU & ICU beds.	50	Nos.		
5	Ampoule Cutter	3	Nos.		
6	Large Plastic Bucket (For Empty Vials)	3	Nos.		
7	Metal Bookends Iron Support Holder Size: 7 inch	50	Nos.		
8	Doctor / Attendant stool <ul style="list-style-type: none"> - Five-Leg Base swivel chair, with a set of wheels for mobility and adjustable height. - 200 lbs Weight bearing capacity. - Step less Two-Way adjustment back support arm, allows vertical alignment. - Polyurethane foam seat / High Density 3" foam padding for both seat & Back Support Arm. Imported.	50	Nos.		
9	High Back Revolving Office Chair: <ul style="list-style-type: none"> - Five-Leg Base swivel chair with a set of wheels for mobility, Long Lumbar Support, Arm Rests and adjustable height. - 300 lbs Weight bearing Capacity - Polyurethane foam seat/ High Density foam padding for both seat & Back rest. Imported.	10	Nos.		
10	Seal for Container CSSD Disposable (Best Quality)	2000	Nos.		
11	UPS 2 KVA Online Pure Sinwave <ul style="list-style-type: none"> • Input: <ul style="list-style-type: none"> • Voltage Range: 220VAC $\pm 5\%$ Single Phase • Input frequency range 50Hz-60Hz (Selectable) • Harmonic Distortion $< 5\%$ or better • Output: <ul style="list-style-type: none"> • Voltage Range: 220VAC $\pm 5\%$ Single Phase • Efficiency 90% or better • Economy Mode Option • Overload Operation. • Harmonic Distortion: $< 4\%$ (linear load), $< 8\%$ (non-linear load) or better • Battery: <ul style="list-style-type: none"> • 12V Sealed lead acid maintenance free batteries • Variable Charger Current 	6	Pcs.		

	<ul style="list-style-type: none">• Transfer Time to battery 0ms• Transfer Time to bypass 0ms• 8minutes to 10 minutes backup at full load <p>. General:</p> <ul style="list-style-type: none">• True online double conversion IGBT technology• Completely digitally controlled• Parallel operation/redundancy option• ISO, EN Certified• Communication and Monitoring Options• Inbuilt Isolation Transformer• Emergency Power Off Switch• Auto Restart• Operating Temperature: 15°C - 30°C• Storage Temperature: 15°C - 50°C <p>Warranty: 2 years UPS and battery</p> <p>Country of origin:</p> <ul style="list-style-type: none">• Must be manufactured in: USA, EEC, Japan or Equivalent <p>Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)</p>																				
12	<p>On Line Double Conversion 15kVA UPS with 3 Phase In and 3 Phase Out.</p> <p>The System should be configured to parallel redundancy.</p> <p>System should be with modular design and having self-diagnostic capability for power module.</p> <p>Should have following features:</p> <ul style="list-style-type: none">• UPS Classification VFI-SS111 (IEC 62040-3)• On-Line Double Conversion• PFC Rectifier with IGBT Technology• Modular Technology• Modules with progressive self diagnostics• High Efficiency• Sine Wave Output• Digital Signaling Processor• Clearly Arranged LCD Display• RS232 and expandability for various interfaces (SNMP, Relays, RS485/Modbus)• Low Weight <table><tr><td colspan="2">Power</td><td>15kVA/12kW</td></tr><tr><td colspan="2">Efficiency (AC-AC) - % (ECO-mode)</td><td>>98</td></tr><tr><td colspan="2">Efficiency (AC-AC) - % (online-mode, 100% load)</td><td>>92</td></tr><tr><td rowspan="3">Input</td><td>Voltage nominal</td><td>3-Phase 400VAC</td></tr><tr><td>Voltage Range</td><td>300-400-415VAC-20% / +15%</td></tr><tr><td>Frequency</td><td>50Hz – 60Hz ±</td></tr></table>	Power		15kVA/12kW	Efficiency (AC-AC) - % (ECO-mode)		>98	Efficiency (AC-AC) - % (online-mode, 100% load)		>92	Input	Voltage nominal	3-Phase 400VAC	Voltage Range	300-400-415VAC-20% / +15%	Frequency	50Hz – 60Hz ±	3	Nos.		
Power		15kVA/12kW																			
Efficiency (AC-AC) - % (ECO-mode)		>98																			
Efficiency (AC-AC) - % (online-mode, 100% load)		>92																			
Input	Voltage nominal	3-Phase 400VAC																			
	Voltage Range	300-400-415VAC-20% / +15%																			
	Frequency	50Hz – 60Hz ±																			

		5Hz
	Power factor	>0.99
Output	Voltage	380-415VAC selectable
	Frequency	50Hz or 60Hz ± 0.001Hz (battery mode) ± 2Hz synchronized mains
	Waveform	sinusoidal
	THD	< 2% (linear load), < 5% (nonlinear load), IEC 62040-3
	Crest factor	3*1
Batteries	Type	Maintenance- free lead-acid batteries
	Autonomy	starting 4 min / depending on the battery mounting
	Charging current	10A
	Charging time	7-8 h to 90% of full capacity after complete discharge
Switching time	AC-DC into the bypass	0ms
Panel	LCD	Alpha-numeric display with backlight
	LED	Diagram with LEDs
Acoustic alarm	can be switched off	Yes
Interface	RS-232 interface	Yes
	SNMP (option)	Yes
	Potential-free contacts (option)	Eight Signals with additional card
Environment	Temperature	0-40°C (Battery 0 - +25°C)
	Humidity	<95% non- condensing
	Audible noise level (at 1m distance)	< 52dB
Safety	Safety	DIN EN 62040- 1
	EMC	DIN EN 62040- 2, Class C3
	Tests	CE
Warranty: 2 years UPS and battery		

	Country of origin: <ul style="list-style-type: none">Must be manufactured in: USA, EEC, Japan or Equivalent Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period).																																				
13	On Line Double Conversion 30kVA UPS with 3 Phase In and 3 Phase Out. <p>The System should be configured to parallel redundancy. System should be with modular design and having self-diagnostic capability for power module. Should have following features:</p> <ul style="list-style-type: none">UPS Classification VFI-SS111 (IEC 62040-3)On-Line Double ConversionPFC Rectifier with IGBT TechnologyModular TechnologyModules with progressive self diagnosticsHigh EfficiencySine Wave OutputDigital Signaling ProcessorClearly Arranged LCD DisplayRS232 and expandability for various interfaces (SNMP, Relays, RS485/Modbus)Low Weight <table><tr><td colspan="2">Power</td><td>30kVA/24kW</td></tr><tr><td colspan="2">Efficiency (AC-AC) - % (ECO-mode)</td><td>>98</td></tr><tr><td colspan="2">Efficiency (AC-AC) - % (online-mode, 100% load)</td><td>>92</td></tr><tr><td rowspan="4">Input</td><td>Voltage nominal</td><td>3-Phase 400VAC</td></tr><tr><td>Voltage Range</td><td>300-400-415VAC-20% / +15%</td></tr><tr><td>Frequency</td><td>50Hz – 60Hz ± 5Hz</td></tr><tr><td>Power factor</td><td>>0.99</td></tr><tr><td rowspan="6">Output</td><td>Voltage</td><td>380-415VAC selectable</td></tr><tr><td>Frequency</td><td>50Hz or 60Hz ± 0.001Hz (battery mode) ± 2Hz synchronized mains</td></tr><tr><td>Waveform</td><td>sinusoidal</td></tr><tr><td>THD</td><td>< 2% (linear load), < 5% (nonlinear load), IEC 62040-3</td></tr><tr><td>Crest factor</td><td>3*1</td></tr><tr><td>Batteries</td><td>Type</td><td>Maintenance-free lead-acid batteries</td></tr></table>	Power		30kVA/24kW	Efficiency (AC-AC) - % (ECO-mode)		>98	Efficiency (AC-AC) - % (online-mode, 100% load)		>92	Input	Voltage nominal	3-Phase 400VAC	Voltage Range	300-400-415VAC-20% / +15%	Frequency	50Hz – 60Hz ± 5Hz	Power factor	>0.99	Output	Voltage	380-415VAC selectable	Frequency	50Hz or 60Hz ± 0.001Hz (battery mode) ± 2Hz synchronized mains	Waveform	sinusoidal	THD	< 2% (linear load), < 5% (nonlinear load), IEC 62040-3	Crest factor	3*1	Batteries	Type	Maintenance-free lead-acid batteries	3	Nos.		
Power		30kVA/24kW																																			
Efficiency (AC-AC) - % (ECO-mode)		>98																																			
Efficiency (AC-AC) - % (online-mode, 100% load)		>92																																			
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	Waveform	sinusoidal																																			
	THD	< 2% (linear load), < 5% (nonlinear load), IEC 62040-3																																			
	Crest factor	3*1																																			
	Batteries	Type	Maintenance-free lead-acid batteries																																		

		Autonomy	starting 4 min / depending on the battery mounting										
		Charging current	10A										
		Charging time	7-8 h to 90% of full capacity after complete discharge										
	Switching time	AC-DC into the bypass	0ms										
	Panel	LCD	Alpha-numeric display with backlight										
		LED	Diagram with LEDs										
	Acoustic alarm	can be switched off	Yes										
	Interface	RS-232 interface	Yes										
		SNMP (option)	Yes										
		Potential-free contacts (option)	Eight Signals with additional card										
	Warranty: 2 years UPS and battery												
	Country of origin: • Must be manufactured in: USA, EEC, Japan or Equivalent												
	Complete Job: Supply, Installation, Testing, Commissioning and Maintenance (during maintenance period)												

14	<p>Supply, Installation, Testing & commissioning of 500kVA Diesel Generator Sets with Canopy operating on 3-phase, 400V, 50Hz, 1500 rpm Prime Rated, Water Cooled Diesel generating sets, suitable for operation at 50°C inside Canopy with control panel, AMF (without ATS) and 90% relative humidity assembled in accordance with their provided drawings / manuals and consisting of painted welded steel bed plate frame work to accommodate engine alternator complete with balanced flywheel, water jacket heaters energized by the incoming main supply, heavy duty starting batteries, battery charger, hour runs meter, KWH meter, emergency stop push button, radiator, with water level switch, fuel tank, piping works, consisting of black steel pipe schedule 40, fuel pump, exhaust system residential type silencer, 400/230 V, 50 Cycles/second , at 1500 RPM, for 3 phase 4 wire system.</p> <p>The work also includes but not limited to</p> <ul style="list-style-type: none"> • Transportation upto site • 1/2 thick neuprene Sheet and placement on foundation pads • Vibration Isolators, leveling and grouting <p>All DG Sets shall be without power panels except for those which has built-in circuit breaker</p> <p>The work also includes all allied mechanical and electrical works including material, labor, tools, accessories etc. Complete in all respects.</p> <p>Note: On load testing (100%, 75% and 50%) of DG set with material required for 4 hours operation inclusive of fuel, engine oil, load bank etc.</p> <p>Supply & Installation of 500 KVA Gen Set</p>	02	Nos.		
	<p>Electric Cables</p> <p>Supply, Laying, Testing and commissioning of following LV Copper Cables PVC/PVC 600/1000V via floor duct/trench or already provided cable ladder with all required installation accessories (already provided)as per direction of the Engineer and Cable Schedule detail. complete in all respect.</p> <p>2 x 4C- 185sqmm CU/PVC/PVC + 2 x 1C-95 sqmm CU/PVC AS ECC</p>	310	Rm		
	<p>Electric Panel</p> <p>Supply, Installation, Testing and Commissioning of Complete LV Switchgear panel as per given SLD with all required installation and termination accessories, all kinds of control cable, Pfi Panel, auto phase reversal and ATS as per Single Line diagram and Specification, Contractor should be submit the Shop drawings for approval.</p> <p>Sync Panel</p>	1	Set		

SECTION P: PHYSIOTHERAPY RELATED ITEMS:

S.#	Item Name & Description	Req. Qty.	U.O.M	Unit Price	Total Amount
01	Reflex Hammer – as Standard	10	Nos.		
02	Goniometry Case - as Standard	1	Nos.		
03	Hot Pack (Cervical, Lumber, Shoulder, Knee) – Standard Dimension	20	Each		
04	Cold Pack (Cervical, Lumber, Shoulder, Knee) - Standard Dimension	20	Each		
05	Therapeutic K-Tape - Standard Size	50	Each		
06	Electrodes with Leads Rubber Made (Compatible with TENS Machine)	10	Packs		
07	Adjustable Walkers - Standard	2	Pcs.		
08	Crutches - Axillary	1	Pair		
09	Crutches - Elbow	1	Pair		
10	Canes - Tripod	1	Each		
11	Canes - Tetrapod	1	Each		
12	Exercise Mats - Standard Size	5	Pcs		
13	Theraband all 05 Colors / 45 Meter Roll	1	Each		
14	Exercise Wrist Band Weights (0 to 5 Kg)	2	Nos.		
15	Swiss Ball Size - Medium	1	Nos.		
16	Swiss Ball Size - Large	1	Nos.		
17	Dumbbells 1Kg	2	Pair		
18	Dumbbells 2Kg	2	Pair		
19	Dumbbells 3Kg	2	Pair		
20	Shoulder Wheel Specification: - Type III	1	Nos.		

S.#	Item Name & Description	Req. Qty.	U.O.M	Unit Price	Total Amount
21	Shoulder Abduction Ladder Specification: - Wall Bars - Simple Model	2	Nos.		
22	Rehabilitation Stairs Specification: - Exercise Stairs - Right Angles Version	1	Nos.		
23	Percussor Specification: - Bucks, Queens and Taylors	5	Nos.		
24	Wrist Roller Specification: - with Adjustable Resistance	1	Nos.		
Note: All Above mentioned items related to Section E are purely base on approved sample basis if the supplier / Bidder not submitted sample along with bidding documents then the items were rejected:					

Note:

1. The technical evaluation carried out by the Procurement Committee, SMBBIT, Karachi will be final.

Signature of Manufacturers /Importers/Sole Agents/Contractors: - _____

Name of Firm: - _____

Full Address: - _____

Telephone No. Office: - _____ Cell No: - _____

Email Address (if any) _____