PROCUREMENT OF PLANT&MACHINERY

Plant & Machinery

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
1.	UPS	• **General Specification** **UPS Rating / Power** 6KVA/6KW Back-up time on typical load Standard Back-up UPS Toplogy ON-Line Double Conversion, Tower Type Technology High Frequency, Transformer Less Technology Brand USA/Europe/UK or Equavilent Working Temperature -10 to 40C Storage Temperature -15 to 60C Emergency Economy Mode Available Emergency Power OFF Available Overall Efficiency 95% ON-Line Mode and 98.5% on Emergency Economy Mode DC Start Function Available Genertaor Compatible Available EMC Standard EN/IEC61000, EN/IEC 62040 Safety Standard GB/T 7260, GB/T4943, YD/T1095,TLC Protections Over load, Short Circuit, Over Temperature, Utility Power High/low, Battery Low, Alarm Mains Abnormal, Mains Fail, Fault, Battery Low, Overload, Short Circuit etc. Display Type LCD with Multiple showing Input Volatge, output Volatge, Battery Volatge , Temperature, UPS Status, ECO Mode etc. • **Input Specifications** Output Power Factor 1 Output Voltage - Single Phase Output Voltage 220VAC Output Volatge Regulation 220+/-1% (Static Load), 220+/-2% (50-0% Sudden Change), 220+/-5% (100-0% Sudden Change) Output Frequency on (Bat Mode)50Hz (+/-0.1%) Output Wave Form Pure Sine Wave Load Crest Factor 3:1	International Recognized Brands DELL/APC Or Equivalent	02Nos				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		• **By-pass Specifications** Static By-pass Transfer 0 msec Static By-passrange 80VAC +/- 5% to 285 +/- 5%. By-pass to Inverter Transfer Time <2 msec **Battery Specifications** Battery Type VRLA, AGM Technology inside UPS VDC-Ah 12V/7Ah Qty 16 Charging Current 1A • **Communication Specifications** Standard Communication Port Standard RS-232 Standard Communication. SNMP/RS485 & Dry Contact (Optional), Network manageable • **Installation.** Installation, Configuration, Commissioning and testing. Documentation CD, Installation guide, Supported Rack, rack Mounting brackets, Rack Mounting hardware with supported nails, warranty card						
2.	Electric Generator Diesel	Supply of 30 KVA Prime Diesel generator set, complete build in unit (EU/UK/USA coupled and assembled) excluding Chinese origin and Local made with solid steel base 160 Liters of base fuel tank with more to be preffered **Make** ONIS VISA/Caterpillar/CPG (Cummins Power Generation **Assembling / Coupling/ Manufacturing** Europe /UK/USA **Note:** assembling, coupling / manufacturing should not be of Chinese origin or local **Engine:** 4Stroke 3 Cylinder Water Cooled 1500Rpm Make Perkins/Caterpillar/Cummins Engine should be of desired mentioned origins (Europe, UK & USA) **Alternator:** Brushless, Self Excited 230-400 Volts 3 Phase 50Hz Make Mecc-Alte/Leroy Somer/ Caterpillar Alternator should be of desired mentioned origins (Europe, UK & USA) **ATS PANNEL** with MOR Supply and installation of TP ATS Panel with all imported	International Recognized Brands UK/USA Or Equivalent	01 Job				

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
		components of adequate ratings /specifications along with the single core/ multi core PVC/ PVC copper conductor cable connected with the Panels of the electric substation coupled with IESCO's electric supply as auto change over switching having necessary inter locking with IESCO's electric supply, manual over ride interlocking, Copper bus bars for output, supply installation testing and commissioning complete in all respect. **Providing and fixing** weather proof & sound proof canopy for 30 KVA DG Set, made with appropriate size M.S. angle iron frame & 12 SWG M.S. sheet and foundation pad duly painted with red oxide & weather proof color. The canopy sound level should not exceed 80 db at a distance of one (1) meter from the Generator and should have necessary doors for inspection/ repair etc. as per approved design and instructions of the Engineers. Make Local Make Local with imported Schneider (excluding Chinese) components brands of major components **EARTHING** Supply of necessary material, cables (Make Pakistan Cables) earthing systems, ROD or Plate type earth electrode including earthing lead, inspection chamber all accessories etc., complete in all respect by mentioning the specifications of adequate system recommendable for the supplied D.G Set of 30KVA along with connections. Less than one ohm of value must be reflected at the time of final inspection by the engineer incharge. **Foundation Pad:** Rcc 12 Inch with steel net . **CABLES** a. Supply of 4-core 25sq.mm2 PVC/PVC copper conductor cable of make Pakistan Cables along with allied accessories and necessary inter connections of D.G Set and IESCO electric supplies and with panels of electric substation. b. Supply of 4-core 2.5sq.mm, color coated control cable of make Pakistan Cables along with allied accessories Make Pakistan cable / Fast Cable **Transportation**					

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
		• Warranty: 01 Year or 1,000 hours operation which ever comes earlier or better warranty will be preferred • Firm Must Provide complete import documents of provided generator with proof and documentary evidence. • Fuel consumption should not be more than 7.1 liters at full load (100%) Load. • Authorized certificate from manufacturer must be required and will be submitted along with the bids • Population of DG sets supplied in recent years must be attached along with the bid • Technical literature (broacher of Gen-set), Engine data sheets, alternator data sheets, control panel data sheets and all other relevant technical details must be submitted along with the bid • Provisioning of User/Service/Maintenance Manual along with schematic and IPB,s of ATS. • Job completion: 15 working days after the receipt of a Purchase Order. • Evaluation criteria: The bidder must have a workshop facility in major cities Like Islamabad / Rawalpindi. It will be visited by the engineer in charge at the time of technical scrutiny of the bidders.					
3.	Floor Standing AC	AC 2.0 Ton for Data Center Cooling Btu/h : 24000 **Cooling** Rated Capacity (c) 6900 W Rated Power Consumption (c) 2350 W Running Current (c) 11 A SEER (c) 2.9 **Electrical Data** Rated Voltage 220-240V Rated Frequency 1PH, 50HZ MAX.INPUT CURRENT 16 A MAX.INPUT POWER 2700 W **Technical Information** Air Flow 1200 m3/h Air Flow Directions 4 WAY	International Recognized Brands Gree/Orient Or Equivalent	02Nos			

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Fan Speed 530/480/430 Display Touch ID UNIT RESISTANCE CLASS 2P25 Sound Level 48 dB(A) Refrigerant R-410A/1420 Grams **Dimensions (WxHxD)** Indoor 506 × 1780 × 315 mm Outdoor 825 × 655 × 310 mm **Weight** Indoor 39 KG Outdoor 44 KG **Warranty** Compressor 10 Years Parts 1 Year R410A Gas 1 Year **Installation** Installation, Configuration, Commissioning and testing. Documentation CD, Installation guide, brackets, With Complete electric Cable Wiring, outer brackets, ducting, fixing, installation with Box and power Sockets						
4.	Furnishing Floor Raising work	**False Ceiling 350 Feet** Provision & Supply of gypsum board laminated false ceiling with 1" wide imported powder coated "T"(CKM thick). With gauge No. 10 G.I wire hangers with adjustable mechanism. **Paint** Providing & Supply Paint Room Size 13'x24' **Glass for Partition 220 Sqft** Providing & Supply 12mm Glass partition fixed in Silver anodized full thickness aluminum H section (top and bottom section), glass to be non-wave clear and fine machine edged. **Glass Door 01Nos** Providing & Supply Glass Door 12mm Glass door (Approx size 3' x 7' each) with hinge and handles with lock fixed in Silver anodized full thickness aluminum H section (top and bottom section). Glass to be non-wave clear and fine machine edged with JAPAN made floor motors	Local/Imported	01 Job				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Window 02 Nos Providing & Supply Window Closed With Bricks Material **Anti Static Tile 350 sqft** Providing Anti-Static Tile of approved quality imported vinyl tiles (Mactile make plane 1.6 mm thick) or equivalent on the floor including skirting where required **Floor Raising** 6 Inch from existing Floor Raise using Bricks and Tiles **Cable Tray 30 Feet** Providing & Supply Cable Tray with roof made of Zinc Chadar 16 Gage with Machine Punched Holes along with Powder Coated Paint with Lockable Cover (Size 12 Inches Wide, 4 Inches Height and Length. With Fixing threading Rod 12mm,Pin Anchor Sleeve 12mm,Angle Iron 2" x1" for Cable Tray Supports **Control System 01 Nos** Providing & Supply Access Control System for Data Center						
5.	Fire & Security	Addressable Wireless Mains supply voltage: 230V a.c. ± 10% 50/60Hz Internal power supply: 27V d.c Nominal Total output current limited to: 1.4A @ 230V a.c. Cabling requirements: 1.5mm2 two core fire resistant, screened Max.no. of repeaters: 8 Max. cable length per repeater network: 500m Addressable Wireless Smoke Detection : Photoelectric chamber 3 Heat Detection : Dual-sensor with fixed temperature and rate-of-rise Operating Modes: Smoke + Heat (OR logic) Smoke only Heat only Wireless RF Modes : Selectable 1-way or 2-way Alarm Sound Level : Exceeds 85dB at 3m (10') Typical Average Standby Current: 0.02mA typical Typical Alarm Current: 100mA Typical Battery Life: Typically 3 years Battery Type: Two CR123 3V lithium batteries Low Battery Threshold: 2.5 V Low Battery Beep rate: One beep every 30 seconds Low Battery Life: 30 days from warning signal Operating Temperature: 14°F – 104°F (-10°C to 40°C) Operating Humidity: 10% to 85% RH, no condensation or icing Nominal Center Frequency : Smoke & Heat Detector – 1 & 2 way 433.92 MHz, Smoke & Heat	International Recognized Brands	01 Job				

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
		Detector – 1 & 2 way 868.65 MHz 10 Anti-Static Bands for Workers **CO2 Extinguisher** Operating Temperature -20 to 60c Safety Valve Wall hanging bracket Controllable discharge Rechargeable Weight: 5-7kg 1 year expiry					
6.	Photocopying Machine	1.Photo Copy Speed 25 CPM B/W, 2. Front Loading Design for space Saving, 3. USB Printing, 4. Image Server memory 2GB, 5. Copy Size A5 to A3, 6. Zoom range 25% -400%, 7. Three Way Power Supply, 8. Toner Life 30000 Prints@6% Coverage, 9. Continuous copying 1-9999, 10. Electronic Sorting Built in, 11. Resolution 1200x122 dpi Print 600x600 dpi scan 600x600 dpi 12. 7" Color Touch Panel, 13. Paper Capicity 1200 Sheets, 14. Drum Life 160,000 copies, 15. Department Ids 1000 Users, 16. Advances Smoothing Technology, 17. Built in Duplex for two sided copies, 18. Network Color Scanner & Built in Wifi. 19. DADF-AZI & local Trolley. Machine Is provided with One Year warranty and free service along with replacement of defective parts (excluding consumable ie Toner Drum Fixing Assembly)	International Recognized Brands Xerox/Richo Or Equivalent	08 Nos			
7.	Split AC	**2 Ton Split AC DC Inverter** **Cooling** Rated Capacity (c) 6400 (2800-7000) W	International Recognized	34			

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Rated Power Consumption (c) 2020 (730-2600) W Running Current (c) 8.8 (3.4-11.4) A SEER (c) 3.6 **Heating** Rated Capacity (h) 6400 (2900-7200) W Rated Power Consumption (h) 2020 (800-2700) W Running Current (h) 8.8 (3.6-11.8) A SEER (h) 3.6 **Electrical Data** Rated Voltage 220-240V Rated Frequency 1PH, 50HZ Max.Input Power 2600 Watt Max.Input Current 11.5 A **Technical Information** Air Flow 1200 m3/h ID UNIT RESISTANCE CLASS 2P24 Sound Level 48 dB(A) Refrigerant R-410A/1300 Grams **Dimensions (WxHxD)** Indoor 1100 x 330 x 235 mm Outdoor 800 × 315 × 545 mm **Weight** Indoor 16 KG Outdoor 54 KG **Warranty** Compressor 10 Years Parts 1 Year R410A Gas 1 Year With Complete electric Cable Wiring, outer brackets, ducting, fixing, installation with Box and power Sockets	Brands Gree/Orient Or Equivalent					
8.	Paper Shredder	PAPER SHREDDER 8-SHEET 4×25MM 16L 9951 Paper Shredder 8-sheet 4×25mm 16L Specification 330×220×475mm Material Nitriding carbon steel, ABS Packaging Colored corrugated box, /, 1pcs/carton Shredding Capacity 8 sheets(70gsm) Cut Type Cross cut Shred: Paper	International Recognized Brands	01 No				
9.	Split AC	**1.5 Ton Split AC DC Inverter** **Cooling** Rated Capacity (c) 5200 (2200-5700) W Rated Power Consumption (c) 1640 (550-2200) W Running Current (c) 7.1 (2.5-9.7) A SEER (c) 3.6 **Heating**	International Recognized Brands Gree/Orient Or Equivalent	13				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Rated Capacity (h) 5200 (2400-6000) W Rated Power Consumption (h) 1600 (600-2300) W Running Current (h) 7.1 (2.6-10.2) A SEER (h) 3.6 **Electrical Data** Rated Voltage 220-240V Rated Frequency 1PH, 50HZ Max.Input Power 2300 Watt Max.Input Current 10.5 A **Technical Information** Air Flow 1200 m3/h ID UNIT RESISTANCE CLASS 2P24 Sound Level 47 dB(A) Refrigerant R-410A/1300 Grams **Dimensions (WxHxD)** Indoor 1100 x 330 x 235 mm Outdoor 802 × 535 × 298 mm **Weight** Indoor 16 KG Outdoor 37 KG **Warranty** Compressor 10 Years Parts 1 Year R410A Gas 1 Year With Complete electric Cable Wiring, outer brackets, ducting, fixing, installation with Box and power Sockets						
10.	UPS With Batteries	**Deep Cycle Solar Battery Long Life Rechargeable** **Type:** Lead-Acid Batteries **Discharge Rate:** Low Discharge Rate **Voltage** 12V Single Battery 6 months warranty 18-24 months estimated battery life Environmental friendly No need to change /Re-fill water No check-up required Specially designed for Inverter and UPS Suitable for all weather conditions Maintenance free with 99.9% capacity efficiency **UPS:** 3000VA/2400Watt/24VDC/230VAC Inverter with built-in solar charger controller Ideal for home appliance/office equipment/lighting/motor-based loads Able to set priority to either solar input or AC input Built-in MPPT to maximize solar energy harvest	International Recognized Brands Inverex/Homeage Or Equivalent	01				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Pure sine wave output Specifications: Power 3000VA/2400Watt/24VDC/230VAC Capacity Suitable for: 10 Tube Lights or 25 Energy Savers 10 Fans & 1 Refrigerator (12Cu ft)						
11.	CCTV Security Centralize for University	• **Camera Qty 64** • 4 MP Fixed Bullet Network Camera • High quality imaging with 4 MP resolution Efficient H.265+ compression technology • Clear imaging against strong back light with 120 dB WDR • Water and dust resistant (IP67) • EXIR 2.0, advanced infrared technology with long IR distance • **NVR Qty 02** • 32-ch 1U 4K NVR • Up to 32 channel IP cameras can be connected • Supports decoding H.265+/H.265/H.264+/H.264 video formats Up to 4K high-definition live view, storage and playback • Up to 8-ch @ 1080p decoding capacity, Up to 256 Mbps high incoming bandwidth ensures IP cameras can be connected • 1 HDMI and 1 VGA interfaces: both interfaces support independent video output, 2 HDDs for continuous video recording • **POE Switch as Per Cameras Installation** • 8 Port Gigabit Unmanaged POE Switch • 8 × Gigabit PoE ports, 1 × Gigabit RJ45 port, 2 × Gigabit SFP fiber optical port, IEEE 802.3at/af standard,IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE • 802.3ab, and IEEE 802.3z standard, 6 KV	International Recognized Brands Dhua/Hikvision Or Equivalent	01 Job				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		surgeprotection for PoE ports, PoE power management ,Gigabit network access • Wire-speed forwarding and non-blocking design,Store-and-forward switching, Solid high-strength metal shell, Reliable fan-free design • 4TB (04 Seagate surveillance grade) • 1 meter Cat6 Ethernet patch cord As per Installation • UTP cable Roll and Cat-6 UTP RJ-45 Connectors • UPS 6KVA with Standard Backup • 02 (LED TV 40") With 2 HDMI Cables 10 Meter						
12.	Metal Detector Hand held	**Operating Temperatures** -35° F (-37° C) to 158° F (70° C) **Humidity** To 95% noncondensing **Audio Frequency** 2kHz Warble **Tuning** Automatic **Indicators** Speaker LED Alert Lights Green: Power ON Amber: Battery LOW Red: ALARM condition **Controls** Power switch (Audible / Off / Silent) Interference Elimination Momentary Switch **Battery** Single 9 volt battery provides up to 100 hours of normal operation. Optional NiMH rechargeable battery provides up to 45 hours on a single charge.	International Recognized Brands	**05 Nos**				
13.	Telephone Exchange	**Smart Hybrid IP Telephone System PBX (VoIP)** A unified communication system which has rich IP features such	International Recognized	**01 Job**				

S/No	Name of Equipment	Specifications	Required Brand	Quantity
		as mobile linking, integrated voice mail and e-mail, instant messaging (chat), and presence information Support Up to 48 Lines & 128 Extensions Intelligent Hybrid PABX System - Built-in applications such as *Call Centre Solution, Mobile Solution and Voice Mail System* - Auto Attendant, Call Forwarding, Call Waiting - Auto recording and backing-up conversations - Automatic voice guidance - Call monitory and history reports - Mobile phone inetgration - Advanced call routing - Group extensions - The finest flexibility comes as standard, analogue and IP handset compatible - VOIP, PTSN, ISDN and GSM compatible - Integrated voice mail and e-mail, instant messaging (chat), and presence information. - Built-in DISA enables the transfer of customer calls without an operator - Record greeting messages, upload pre-recorded WAV file to be used as greeting message - Expandable with up to 3 expansion cabinets - Caller ID Built in CLI - IVR Built in DISA - UPS Builtin UPS with POE setup for Telephone sets - GSM gateway for sms and Calls Operator Console Included **Main CPU** Cortex A8 600 MHz Cortex A8 300 MHz **Power Input** 100 V AC to 130 V AC: 2.2 A/200 V AC to 240 V	Brands Cisco/Panasonic or Equivalent	

S/No	Name of Equipment	Specifications	Required Brand	Quantity
		AC: 1.3 A; 50 Hz/60Hz **Power Consumption (when fully mounted)** 110 W **External Backup Battery** External battery port is supported **Memory Backup Duration** 7 years **Dialling Trunk Dial Pulse (DP)** 10 pps, 20 pps Tone (DTMF) Dialling **Extension Dial Pulse** (DP) 10 pps, 20 pps Tone (DTMF) Dialling **Mode Conversion** DP-DTMF, DTMF-DP **Ring Frequency** 20 Hz/25 Hz (selectable) **Operating Environment Temperature** 0 °C to 40 °C **Humidity** 10 % to 90 % (non-condensing) **Conference Call** Trunk From 10 x 3-party conference call to 4 x 8-party conference call - **Music on Hold** (MOH) Maximum 8 ports (Level Control: -31.5 dB to +31.5 dB per 0.5 dB) MOH: Selectable Internal/External Music Source port - **External Paging** Maximum 6 ports (Volume Control: -15.5 dB to +15.5 dB per 0.5 dB) - **LAN Port 1 (for LAN connection)** 10BASE-T/100BASE-TX (Auto MDI/MDI-X) - **Extension Connection** **Cable SLT** 1-pair wire (T, R) **DPT** 1-pair wire (D1, D2) or 2-pair wire (T, R, D1, D2) **PT-interface CS** 1-pair wire (D1, D2) **PT-interface CS** (**Highdensity**) 4-pair wire (D1, D2) **DSS Console and Addon Key Module** 1-pair wire (D1, D2) **Air-cooling Method Fan** **Dimension** 430 mm (W) x 88 mm (H) x 367 mm (D) Weight (when fully mounted) Under 4.5 kg **Web Maintenance Console Accounts** Users (User) 500 accounts **Users (Administrator)** 8 accounts		

S/No	Name of Equipment	Specifications	Required Brand	Quantity
		Installer 1 account **Password (all account types) 4 – 16 characters** **Total Number of Trunks** 100 Ch Legacy 36 Ch BRI – PRI30 30 E1 30 Analogue 12 H.323 32 **Maximum Terminal Equipment** Extensions (DXDP*1) 162 (168) Legacy (DXDP*1) 34 (40) SLT 32 DSS Console 8 Built-in UM (ch) 24 1 Year Warranty Of System Complete Installation of VOIP Solution with Basic IP Desktop Phone **60 VOIP Telephone Sets** with CLI, HD audio and Speaker Phone, Handset, Speaker, Headset Volume 8 levels (includes echo cancellation and distortion prevention) **Ringtones** 27 **Ringer Volume** 8 levels + Off **Headset Port** RJ9 jack **Audio Codec** G.711a-law / G.711μ-law / G.722 (wideband) / G.729a **HD Voice** Yes **Phone Book** (Local) 500 **LDAP Remote Phonebook** Yes **Call Log Entries** 30 incoming calls + 30 outgoing calls **Conferencing** 3 parties (within terminal – multi-party dependent		

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		on server) **Music on Hold** Supplied by Host Service (PBX / SIP Server) **IP Version** IPv6 / IPv4 **SIP Compatibility** RFC 3261 Standard SIP Server, Asterisk, Broadsoft, Panasonic IP PBX with 1 Year Warranty						
14.	Walk Through Gate	Technical Parameters Product model BC-WZ33-B Vertical dimension 2190×535x892mm Vertical channel dimension 2030x716mm Probe door panel packing dimensions 2270x700x230mm Net weight of main cabinet/detection door panel 45KG Gross weight of main cabinet/detection door panel 52KG Operating voltage AC90V～240V 50／60Hz Power dissipation 15W Operating frequency range 1—20 Bands Working environmental temperature -20℃～65℃ Installation environment (W) 100cm*(L) 200cm(metal-free minimum range) sheet transverse Regional detect metal precision range Maximum Sensitivity ≥6g Metal Technical Standards Electrical refer to EN60950 safety standard Compliance	International Recognized Brands	**02 Nos**				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Radiation refer to EN50081-1 standard Compliance Anti-interference refer to EN50082-1 standard Compliance						
15.	LED TV	Display Screen Size65" Resolution3,840 x 2,160 Video Picture Engine Quantum Processor 4K •Motion Rate200 •PQI (Picture Quality Index)3000 •HDR (High Dynamic Range)Quantum HDR 4x •HDR 10+Yes •ContrastMega Contrast •HLG (Hybrid Log Gamma)Yes •ColorColor Volume 100% by Quantum Dot •Viewing AngleWide Viewing Angle •Micro DimmingSupreme UHD Dimming •Contrast EnhancerYes •Auto Motion PlusYes •Film ModeYes •Natural Mode SupportYes Audio •Dolby Digital PlusYes •Dialog EnhancementYes •Sound Output (RMS)20W •Speaker Type2CH •Multiroom LinkYes •Blutooth AudioYes Smart Service • SMART TVSmart •BixbyUS English, Korean, UK English, French, German, Italian, Spanish (features vary by language) •Far-Field Voice InteractionYes •Web BrowserYes •SmartThings App SupportYes •SmartThingsYes •GalleryYes Convergence	International Recognized Brands Samsung/Sony Or Equivalent	05 Nos				

S/No	Name of Equipment	Specifications	Required Brand	Quantity
		•TV to Mobile - MirroringYes •Mobile to TV - Mirroring, DLNAYes •360 Video PlayerYes •360 Camera SupportYes •Bluetooth Low EnergyYes •WiFi DirectYes •TV Sound to MobileYes •Sound MirroringYes Localization •Analog Clean ViewYes •Triple ProtectionYes Tuner/Broadcasting •Digital BroadcastingDVB-T2C •Analog TunerYes •TV KeyYes Connectivity •HDMI4 •USB2 •Component In (Y/Pb/Pr)1 •Composite In (AV)1 (Common Use for Component Y) •Ethernet (LAN)Yes •Digital Audio Out (Optical)1 •RF In (Terrestrial / Cable input)1/1(Common Use for Terrestrial)/0 •HDMI A / Return Ch. SupportYes •HDMI Quick SwitchYes •Wireless LAN Built-inYes •Anynet+ (HDMI-CEC)Yes Design •DesignNew Edge •Bezel TypeSNB •Slim TypeSlim •Front ColorCharcoal Black •Stand TypeSimple •Stand ColorCharcoal Black Additional Feature		

S/No	Name of Equipment	Specifications	Required Brand	Quantity
		•AI TechnologyYes •AI UpscaleYes •AmbienceYes •Ambient Mode Brightness/Color SensorYes •AccessibilityLearn menu screen(AU English, France, Germany, Spain)/ SeeColors/ Negative colors/ Grayscale/ Voice guide(AU English, France, Germany, Spain)/ Enlarge/ High contrast/ Learn TV Remote(AU English, France, Germany, Spain)/ Multi-output Audio •Digital Clean ViewYes •Auto Channel SearchYes •Auto Power OffYes •Caption (Subtitle)Yes •Connect Share™ (HDD)Yes •ConnectShare™ (USB 2.0)Yes •EPGYes •Extended PVRYes •Game ModeYes (Auto Game Mode, Game Motion Plus, Dynamic Black EQ, Game Enhancer) •FreesyncFreeSync •OSD LanguageLocal Languages •BT HID Built-inYes •USB HID SupportYes •Teletext (TTX)Yes •Time ShiftYes •IPv6 SupportYes •MBR SupportYes Eco Feature •Eco SensorYes Power •Power SupplyAC100-240V 50/60Hz •Power Consumption (Max)205 W •Power Consumption (Stand-by)0.50 W Dimension •Package Size (WxHxD)1611 x 975 x 178 mm •Set Size with Stand (WxHxD)1456.1 x 917.0 x 322.8 mm		

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		•Set Size without Stand (WxHxD)1456.1 x 836.6 x 59.2 mm •Stand (Basic) (WxD)1086.5 x 322.8 mm Weight •Package Weight34.0 kg •Set Weight with Stand26.4 kg •Set Weight without Stand26.0 kg Accessory •Remote Controller ModelTM1950C •Batteries (for Remote Control)Yes •Smart Control (Included)Yes •Mini Wall Mount SupportYes •Vesa Wall Mount SupportYes •User ManualYes Power CableYes						
16.	Spot Lights with stands	Standard	International Recognized Brands	02 Nos				

Plant & Machinery for Hostel

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
1.	Geyser	Steel body with capacity of 35 gallon	Local	1				
2.	Stoves (Burner) for kitchen	Full size (48 nali wali)	Local	6				
3.	Burner for Tandoor	Full size (14")	Local	2				
4.	Freezer (Triplet)	Full size	International Recognized Brands Dawlance/Pel or Or Equivalent	3				
5.	Refrigerator	18 cft.	International	3				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
			Recognized Brands Dawlance/Pel or Or Equivalent					
6.	Stove (for Student use)	Double burner steel body standard size	Local	6				
7.	Water Cooler (Electric)	Steel body, Standard size	Local	5				
8.	Cooking Utensils	Large size Silver Steel (Size round 6.8' x H: 1.2' x W: 2.3')	Local	4				
9.	Geyser	Steel body with Capacity of 55 gallons	Local	6				
10.	Street lights (LED)	100 watts LED Lights with 1year warranty	Local	14				
11.	LED TV	65" LED TV for Hostel Hall	International Recognized Brands Samsung/Sony Or Equivalent	1				

Plant & Machinery for Webinar Room

S/No	Name of Equipment	Specifications	Required Brand	Quantity		
1.	Sound System	06 ceiling mount speakers, 02 wall mount speakers, 02 Wireless 4 in one Mic System (Collar Mic, Hand Held Mic, Table Mic and FM Frequency receiver), Audio Power Amplifier. Fitting included. With One Year Warranty of each product. Room Measurement Width 28ft Length 50ft	International Recognized Brands	01 Job		

Plant & Machinery for Auditorium

S/No	Name of Equipment	Specifications	Required Brand	Quantity		
1.	Sound System	12 wall mount speakers, Audio Power Amplifier with noise cancelation features Wireless 4 in 1 mic Stage audio monitor Fitting included. With One Year Warranty of each product. Room Length As per Actual On Sight.	International Recognized Brands	01 Job		

Mass Communication TV Studio & NLE

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
1.	4 TB Transcend External Drives	4 TB External Drives	International Recognized Brands	2			
2.	Zhiyun tech crane v2 3-axis handheld gimbal stabilizer	Zhiyun tech crane v2 3-axis handheld gimbal stabilizer	International Recognized Brands	4			
3.	Tamron SP 24-70mm f/2.8 Di VC USD G2 Lens for Canon EF	Tamron SP 24-70mm f/2.8 Di VC USD G2 Lens for Canon EF	International Recognized Brands	1			
4.	Samyang 35mm cine lens T1.5	Samyang 35mm cine lens T1.5	International Recognized Brands	1			
5.	Samyang 50mm T.1.5 lens	Samyang 50mm T.1.5 lens	International Recognized Brands	1			
6.	Samyang 85mm lens f/1.4	Samyang 85mm lens f/1.4	International Recognized Brands	1			

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
7.	Samyang 14mm f/2.8 ED AS IF UMC Lens	Samyang 14mm f/2.8 ED AS IF UMC Lens	International Recognized Brands	1			
8.	Canon 70-200mm lens f/2.8	Canon 70-200mm lens f/2.8	International Recognized Brands	1			
9.	JVC camcorder GY-HM190AG USMlens	JVC camcorder GY-HM190AG USMlens	International Recognized Brands	4			
10.	Acebil tripod 605DX	Acebil tripod 605DX	International Recognized Brands	4			
11.	Libec dolly DL-2	Libec dolly DL-2	International Recognized Brands	4			
12.	Swit battery for camcorder	Swit battery for camcorder	International Recognized Brands	8			
13.	Genelec Audio monitoring system Genelec 8020A	Genelec Audio monitoring system Genelec 8020A	International Recognized Brands	2			
14.	Data video wired talkback system ITC-100 with 04 CB-03, 20 meter extension cables	Data video wired talkback system ITC-100 with 04 CB-03, 20 meter extension cables	International Recognized Brands	1			
15.	Sennheiser handheld	Sennheiser handheld wireless microphone	International	2			

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
	wireless microphone EW135G4	EW135G4	Recognized Brands					
16.	Sennheiser collar wireless microphone EW112G4	Sennheiser collar wireless microphone EW112G4	International Recognized Brands	4				
17.	Camera mount LED lights for ENG	Camera mount LED lights for ENG	International Recognized Brands	6				
18.	Portable LED Light set with stand/case	Portable LED Light set with stand/case	International Recognized Brands	3				
19.	Canare video cable 200 meter	Canare video cable 200 meter	International Recognized Brands	4				
20.	Canare Crimping Plug BNC-BCP-B3F	Canare Crimping Plug BNC-BCP-B3F	International Recognized Brands	100				
21.	Canare Coaxial Cable Stripper tool (TS100E) (Zip ties is quoted below in pack of 100)	Canare Coaxial Cable Stripper tool (TS100E) (Zip ties is quoted below in pack of 100)	International Recognized Brands	1				
22.	Canare Die Set TC-1 with TCD-35CA Die 1 Set	Canare Die Set TC-1 with TCD-35CA Die 1 Set	International Recognized Brands	1				
23.	Genelec Audio monitoring system	Genelec Audio monitoring system Genelec 8020A	International Recognized	2				

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
	Genelec 8020A		Brands				
24.	Behringer B2 microphones	Behringer B2 microphones	International Recognized Brands	2			
25.	LED TV 50" for control panel with full accessories	LED TV 50" for control panel with full accessories	International Recognized Brands	2			
26.	Black magic design ATEM Television Studio Pro HD	Black magic design ATEM Television Studio Pro HD	International Recognized Brands	1			
27.	SanDisk 480GB Extreme Pro Solid State Drive SDSSDXPS- 480G-G24	SanDisk 480GB Extreme Pro Solid State Drive SDSSDXPS- 480G-G25	International Recognized Brands	2			
28.	Sonifex dual line telephone hybrid	Sonifex dual line telephone hybrid	International Recognized Brands	1			
29.	Black magic design Mini Analog To SDI Converter	Black magic design Mini Analog To SDI Converter	International Recognized Brands	1			
30.	Black magic design Mini SDI To Analog Converter	Black magic design Mini SDI To Analog Converter	International Recognized Brands	1			
31.	Black magic design hyper deck studio Pro	Black magic design hyper deck studio Pro	International Recognized Brands	1			
32.	Sandisk memory cards	Sandisk memory cards 64GB	International	12			

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
	64GB		Recognized Brands					
33.	Silicon power memory card reader	Silicon power memory card reader	International Recognized Brands	3				
34.	Yamaha audio mixer MG-124CX	Yamaha audio mixer MG-124CX	International Recognized Brands	1				
35.	Behringer headphones for monitoring HPM-999	Behringer headphones for monitoring HPM-1000	International Recognized Brands	4				
36.	Proel Microphone cable HPC 210 (100m)	Proel Microphone cable HPC 210 (100m)	International Recognized Brands	4				
37.	IM HDMI Cable 20 Meter HDMI-20M (4K capable)	IM HDMI Cable 20 Meter HDMI-20M (4K capable)	International Recognized Brands	6				
38.	Black magic UltraStudio 4K	Black magic UltraStudio 4K	International Recognized Brands	1				
39.	Thunderbolt Cable OEM	Thunderbolt Cable OEM	International Recognized Brands	2				
40.	Neutrik 3Pin XLR Male and Female Connectors pair	Neutrik 3Pin XLR Male and Female Connectors pair	International Recognized Brands	30				

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
41.	Toten Broadcast Rack OEM-42RU	Toten Broadcast Rack OEM-42RU	International Recognized Brands	1				
42.	Emerson Liebert (GXT6000MTPLUS230) UPS 5KVA GXTMTPLUS Online 6000VA/4800W 230V PF 0.8 LCD Tower, Standard Backup	Emerson Liebert (GXT6000MTPLUS230) UPS 5KVA GXTMTPLUS Online 6000VA/4800W 230V PF 0.8 LCD Tower, Standard Backup	International Recognized Brands	2				
43.	PREVIEW MONITORS on Camera Monitor 7"	PREVIEW MONITORS on Camera Monitor 7"	International Recognized Brands	2				
44.	Lighting Grid: 16 Guage, 2" dia grid pipe dimensions 32'x28', grid space from roof 1.5 ft with Primer coat (01) and Black Paint coating (02), roof mounted brackets (30), wall mounted brackets (15), welding rod (03 box), disc cutting (02), disc grinding (02), Rawal Bolts, Transportation, Labour.	Lighting Grid: 16 Guage, 2" dia grid pipe dimensions 32'x28', grid space from roof 1.5 ft with Primer coat (01) and Black Paint coating (02), roof mounted brackets (30), wall mounted brackets (15), welding rod (03 box), disc cutting (02), disc grinding (02), Rawal Bolts, Transportation, Labour.	International Recognized Brands	1				

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
45.	Breakout boxes 8 AV input & AV outputs	Breakout boxes 8 AV input & AV outputs	International Recognized Brands	1			
46.	Talkback patch panels 4 ports	Talkback patch panels 4 ports	International Recognized Brands	1			
47.	Complete equipment installation and configuration, lighting grid installation and electrical work charges - 01 job	Complete equipment installation and configuration, lighting grid installation and electrical work charges - 01 job	International Recognized Brands	1			
48.	Technical training with basic hardware (01 week)	Technical training with basic hardware (01 week)	International Recognized Brands	1			
49.	ONAIR LIGHT	ONAIR LIGHT	International Recognized Brands	3			
50.	Electrical material, wiring from main DB to studio, individual circuit breakers for lights, main 60 circuit breaker, Sub DB in studio, termination, clamps, sockets for lights, wiring from Sub DB to lights	Electrical material, wiring from main DB to studio, individual circuit breakers for lights, main 60 circuit breaker, Sub DB in studio, termination, clamps, sockets for lights, wiring from Sub DB to lights etc	International Recognized Brands	1			

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
	etc						
51.	Installation material and accessories, patching cables, cable ducts, power sockets, cable trays, additional accessories to complement the system	Installation material and accessories, patching cables, cable ducts, power sockets, cable trays, additional accessories to complement the system	International Recognized Brands	1			
52.	Rolling Steps/Ladder	Rolling Steps/Ladder	International Recognized Brands	1			
53.	Cool lights includes, c-clamp and safety chain, power cord	Cool lights includes, c-clamp and safety chain, power cord	International Recognized Brands	12			
54.	Roll down back drops size 7'x10'	Roll down back drops size 7'x10'	International Recognized Brands	2			
55.	2-Ton Split AC for MCR & Studio	2-Ton Split AC for MCR & Studio	International Recognized Brands	3			
56.	Yamaha audio mixer MG-124CX	Yamaha audio mixer MG-124CX	International Recognized Brands	1			
57.	ANTI STATIC RAISED FLOORING for Control Room WOOD, CORE	ANTI STATIC RAISED FLOORING for Control Room WOOD, CORE 600 * 600 * 38mm with vinyl sheet on top. Wooden floor with termite	International Recognized Brands	100			

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
	600 * 600 * 38mm with vinyl sheet on top. Wooden floor with termite treatment	treatment						
58.	Broadcast table with equipment docs and concealed cable system and hollow legs 8'x3'	Broadcast table with equipment docs and concealed cable system and hollow legs 8'x3'	International Recognized Brands	1				
59.	Media Equipment Storage Cabinet 8'x10'x2'	Media Equipment Storage Cabinet 8'x10'x2'	International Recognized Brands	1				
60.	NLE Lab with workstations desks on two walls 34' each	NLE Lab with workstations desks on two walls 34' each	International Recognized Brands	1				
61.	Electrical material sockets, power cables etc for NLE lab (termination from main DB will be provided by client)	Electrical material sockets, power cables etc for NLE lab (termination from main DB will be provided by client)	International Recognized Brands	1				
62.	Networking points for 20 workstations with complete wiring and I/O	Networking points for 20 workstations with complete wiring and I/O	International Recognized Brands	1				
63.	Installation material for NLE lab	Installation material for NLE lab	International Recognized Brands	1				

Day Time Net Metering (On Grid) Solar System
For Administrative, BS, Ma Library, Physics, A Block, Post Graduate Block

S/No	Name of Equipment	Specifications	Required Brand	Quantity		

S/No	Name of Equipment	Specifications	Required Brand	Quantity
1.	PV Panels	**Electric Specification** STC rated output (Pmpp)* 320 Wp Rated voltage (Vmpp) at STC 37.02 Rated current (lmpp) at STC 8.65 Open circuit voltage (Voc) at STC 45.45 Short circuit current (Isc) at STC 9.25 Module efficiency 16.5% Rated output (Pmpp) at NOCT 223.5 Wp Rated voltage (Vmpp) at NOCT 33.80 V Rated current (Impp) at NOCT 6.61 A Open circuit voltage (Voc) at NOCT 41.70 V Short circuit current (Isc) at NOCT 7.15 A Temperature coefficient (Pmpp) - 0.408%/°C Temperature coefficient (Isc) +0.050%/°C Temperature coefficient (Voc) - 0.311%/°C Normal operating cell temperature (NOCT) 46±2°C Maximum system voltage (IEC/UL) 1000VDC or 1500VDC Number of diodes 3 Junction box IP rating IP 67 Maximum series fuse rating 15 A **Mechanical Specification** Outer dimensions (L x W x H) 1960 x 992 x 40 mm 77.17 x 39.06 x 1.57 in Frame technology Aluminum, silver anodized	International Recognized Brands Or Equivalent	1450 Nos

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		Module composition Glass / EVA / Backsheet (white) Front glass thickness 3.2 mm / 0.13 in ① Cable length (IEC/UL) 1150 mm / 45.28 in Cable diameter (IEC/UL) 4 mm² / 12 AWG ② Maximum mechanical test load 6000 Pa (front) / 3600 Pa (back) Fire performance (IEC/UL) Class C (IEC) or Type 1 (UL) Connector type (IEC/UL) MC4 compatible **Packing Specification** Weight (module only) 21.9 kg / 48.28 lbs ②Packing unit 27 pcs / box Weight of packing unit (for 40'HQ container) 636 kg / 1402 lbs Number of modules per 40'HQ container 648 pcs						
2.	Inverter 60KW	**Input** DC Power 65000W-72000W DC input Voltage 1000v DC Input Current 120A(4x30A). **Output** Rated Output Power 50000W-60000W Output Power 55KVA-66KVA Output Current 80A-96A Rated Grid voltage 400V Grid Voltage Range 310-480V Grid Frequency 50GHz/60GHz	International Recognized Brands Or Equivalent	08 Nos				

S/No	Name of Equipment	Specifications	Required Brand	Quantity			
		Grid Frequency Range 55Hz/65Hz THD <2% Under the rated power Power factor >0.9 Dc current injection <0.5% **System Data** Max Efficiency 98.7%-98.9% Euro Efficiency 98.3%-98.5% Humidity range 0-95% Colling type Intelligent Forced air Temperature Range -25-60 ºC Max Working altitude 4000m Display two line LCD/Two LEDS Communication Interface RS485/GPRS **Mechanical Data** Dimension 670x960x3000m Weight 75Kg Protection Class IP65 **Standard** Grid Connected standard NB/T32004-2013; GB/T19964-2012 Saftey Standard NB/T32004-2013;IEC 62109-1/2 Electromagnetic compatibility IEC 61000-6-2/4					
3.	Fixed Frames	12 Guage Galvanized Rust Protected frames & Fixtures for PV Panels, Strong enough and capable to withstand high speed wind long life structure	International Recognized Brands Or Equivalent	01 Nos			

S/No	Name of Equipment	Specifications	Required Brand	Quantity
4.	Local Material	Cabling, Earth wire, Earthling Rod, Fuses on DC, Breaker on AC Bus bar Panel **Bus bar** Glind nut 25mm PVC connector 100 amp Thimble 16mm Tape (Red+Yellow+Blue+Black) **BREAKER + FUSE + SPD** MCB 3 Pole 16 Amp MCB 4 Pole 100 Amp SPD AC Side **Cable** DC 4mm Cable (bus bar to inverter) 4 Core 6mm Cable (meter to bus bar)4 core 10mm **EARTHING** Cable (Flexible)10mm Yellow Green Clamp1/2" Lightning Arrester Rod 1/2" x 5' Saddle7mm **PIPE** Cable tie 6" Flexible pipe1"+1.5" PVC pipe 1" PVC SOCKET + bend + Tee1" Saddle (Steel)1"	International Recognized Brands Or Equivalent	01 Nos

S/No	Name of Equipment	Specifications	Required Brand	Quantity				
		PV MC4 connector PV panel Astronergy 320W Panel Nut, Bolt & Washers ¼ , ¾ PV Structure Fix Frame (2 panel) Legs+Feet PV Structure nut, bolt & washers Rawal Bolt 8mm x 3" Silicon Large **INVERTER** Box for breaker Box for Disconnect Switch Inverter Rawal plug Screw Wooden screw 1.5" Net Metering Plate						
5.	Installation	Installation of Panel, Testing & Commissioning. Complete in all respect	Local	01 Nos				
6.	Net Metering License	Net Metering License and Bi Directional Meter IESCO Fee.	Local	01 Nos				