

## Corrigendum to tender notice

**Tender Inviting Authority: Executive Engineer (Civil & Electrical), GADVASU, Ludhiana**

**Name of Work: Furnishing of Auditorium at College of Dairy Science & Technology, GADVASU, LUDHIANA Endst. No.EE/2023/1944-49**

### **General Terms and conditions: -**

1. The sufficient number and appropriate locations of seats shall be provided in the auditorium as per the NBC guidelines.
2. The appropriate standards pertaining to acoustics and noise control shall be followed and maintained so that the auditorium should meet the performance standards for indoor ambient noise level, air borne and impact sound insulation and reverberation time as per NBC & latest guidelines issued for the auditorium. Accordingly, these parameters are to be properly designed, got approved and incorporated in the auditorium. The contractor shall employ "Specialised Acoustics and Audio-Visual Consultant" at his own cost to design the interior/acoustics of the auditorium considering NC 30 (Noise Criterion), reverberation time 1.0-1.25 in conjunction of audio system to get the required deliverables such as SPL, RT, STI.
3. The bidder shall submit the 2 D & 3D renders of interiors, Acoustics and Audio Ease Simulations and all required drawings and technical details of the items quoted in the tender bid before commencing the actual execution of work.
4. The bidder shall ensure that the various standards are maintained and the required deliverables such as RT60 should be less than 1s, SPL should be maintained at 105dB and STI.
5. The bidder shall examine the site thoroughly and ensure that the viewing angles and line of sight are maintained as per the standards.
6. The bidder shall submit a warranty for all equipment, materials and accessories supplied by him against manufacturing defects, malfunctioning or under capacity functioning. The warranty shall be valid for **a period of 5 years** from the date of commissioning and handing over. The warranty shall expressly include repair/replacement of all defective or under capacity equipment including the visiting charges of engineer/technician at GADVASU.
7. The bidder shall include **2-year free maintenance** (also known as defect liability period) and shall include 4-hour response time and maximum one-week resolution time under service level agreement. The Bidder shall guarantee the replacement of faulty materials and workmanship within 24 hours of notification at no cost to the Client, if failure occurs during warranty period. He shall provide standby equipment as required to keep the system operational if the system cannot be repaired within 48 hours of intimation.
8. The bidders have to quote their price bid as per revised specifications as below and corrigendum.
9. The successful bidder has to provide 'hands on training' for the installed equipment/schematic to two personnel deployed by the university at his own cost.

Revised tender specification for following items in BOQ/DNIT

BOQ /DNIT Sl.	Existing Item Description	Revised Item Description
1	<p>Supply, installation, testing &amp; Commissioning of stage FOH clusters having 14" or dual 10" or better LF driver and multiple MF/HF drivers (More than 4), Bi-amplified 2 or 3 Way array loudspeaker system, with Individual Module free field Frequency Range (-10dB) of 60Hz - 18kHz or better &amp; Continuous Power Handling of <math>\geq 600W</math> LF + 150W MF/HF. The Loudspeaker module shall have a Max. SPL (Peak) of MF/HF <math>\geq 130</math> or better. It should have a Horizontal near dispersion pattern of <math>100^\circ</math> or better, vertical dispersion of the array shall be 70 degrees or better. The Modules shall be of Baltic birch plywood construction with internal metal bracing. All OEMs shall offer a suitable number of modules to achieve the required vertical angle (Minimum of 2 array modules) complete in all respect with required accessories as desired by Engineer-In-Charge.</p> <p><b>Make :- Bose/QSC/JBL /Renkus-Heinz</b></p>	<p>Supply, installation, testing &amp; Commissioning of stage FOH clusters having 14"/12"/10 or better LF driver and multiple MF/HF drivers, Bi-amplified 2- or 3-Way array loudspeaker system, with Individual Module free field Frequency Range ((-10dB) of 60Hz - 18kHz / (-3db) of 80Hz - 18kHz) or better &amp; Power Handling of <math>\geq 400W</math> LF + 50W MF/HF. The Loudspeaker module shall have a Sensitivity of LF: 98 dB-SPL and Max. SPL (Peak) of 130 db or better. It should have a Horizontal near dispersion pattern of <math>100^\circ</math> or better, vertical dispersion of the array shall be 70 degrees or better. The Modules shall be of Baltic birch plywood construction with internal metal bracing. All OEMs shall offer a suitable number of modules to achieve the required vertical angle (Minimum of 4 array modules) complete in all respect with required accessories as desired by Engineer-In-Charge.</p> <p><b>Make :- Bose/QSC/JBL /Renkus-Heinz.</b></p>
3	<p>Supply, installation, testing &amp; Commissioning of a single 18" subwoofer. The loudspeaker shall meet the following criteria: usable Frequency Range (-10 dB) of 28 Hz - 200Hz or better. It should have an axial Sensitivity of <math>\geq 92dB</math> (1W/1m) or more delivering a free field Max. Calculated SPL (peak) of <math>\geq 127</math> dB or better. The loudspeaker should have a nominal impedance: 4/8 ohm and continuous Power Handling of 750W or more; Complete with installation accessories as per the site requirement.</p> <p><b>Make :- Bose/QSC/JBL/ Renkus-Heinz</b></p>	<p>Supply, installation, testing &amp; Commissioning of a single 18" or dual 15" subwoofer. The loudspeaker shall meet the following criteria: usable Frequency Range (-10 dB) of 35 Hz - 120/200Hz or better. It should have an axial Sensitivity of <math>\geq 92dB</math> (1W/1m) or more delivering a free field Max. Calculated SPL (peak) of <math>\geq 127</math> db or better. The loudspeaker should have a nominal impedance: 4/8 ohm and continuous Power Handling of 750W or more; Complete with installation accessories as per the site requirement.</p> <p><b>Make :- Bose/QSC/JBL /Renkus-Heinz.</b></p>

5	<p>Supply, installation, testing and commissioning of two-way 5.25-inch or better high SPL IP55 rated surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 90Hz - 18 kHz or better; Nominal Dispersion : 90°H x 80°V or better; Power handling of 400W peak or more; Sensitivity : 86 dB or better and the Max SPL : 116dB Peak or more with a Nominal Impedance of 8 ohms and Integral multi-tap Transformer with selectable tap settings of 10/20/40/80W@70V &amp; 100V; Standard wall mount brackets shall be included complete in all respect with required accessories as desired <b>Bose/QSC/JBL/ Renkus-Heinz</b></p>	<p>Supply, installation, testing and commissioning of two-way 5.25-inch or better surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 90Hz - 18 kHz / Frequency Range (-3 dB) of 100 Hz to 20 kHz or better; Nominal Dispersion : 90°H x 50°V or better; Power handling of 400W peak or more; Sensitivity : 86 dB or better and the Max SPL : 116dB Peak or more with a Nominal impedance of 8/16 ohms and Standard wall mount brackets shall be included complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make :- Bose/QSC/JBL /Renkus-Heinz.</b></p>
6	<p>Supply, installation, testing &amp; Commissioning of Passive two-way point source loudspeaker with a single 8-10" LF driver and compression driver with 1.7" or better Voice coil. Frequency Range (-10dB) of 80Hz - 18kHz or better &amp; long term Continuous Power Handling of 250W or better. The Loudspeaker module shall have a Max. SPL (Peak) of 122 or better. It should have Horizontal dispersion pattern of 90° or better, vertical dispersion of the loudspeaker shall be 60 degrees or better. The loudspeaker shall be enclosed in a Multi angle Baltic birch plywood enclosure with perforated steel grille. complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make :- Bose/QSC/JBL/ Renkus-Heinz</b></p>	<p>Supply, installation, testing &amp; Commissioning of Passive two-way point source loudspeaker with a single 10"/12" LF driver and compression driver with 1.5" or better. Frequency Range (-10dB) of 80Hz - 18kHz or better &amp; long term Continuous Power Handling of 250W or better. The Loudspeaker module shall have a Max. SPL (Peak) of 122 or better. It should have Horizontal dispersion pattern of 90° or better, vertical dispersion of the loudspeaker shall be 50 degrees or better. The loudspeaker shall be enclosed in a Multi angle plywood enclosure with perforated steel grille. complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make :- Bose/QSC/JBL /Renkus-Heinz.</b></p>
7	<p>Supply, installation, testing and commissioning of Full range 4.5-inch or better IP55 rated surface mounted music loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency range (-10dB) of 70Hz to 17kHz; Power handling of 160 Watt peak; Nominal dispersion of 90°(H) x 80°(V); Sensitivity of 87 dB SPL and Max SPL of 109 dB SPL peak or better; Nominal Impedance of 8 ohms and Integral multi-tap Transformer with selectable tap settings of 5/10/20/40W@70V &amp; 100V. The loudspeaker system shall be enclosed in engineered-plastics and a powder-coated steel grille. UL-1480 rated and EN54-24 compliant for Life safety/VA applications. <b>Make :- Bose/QSC/JBL / Renkus-Heinz`</b></p>	<p>Supply, installation, testing and commissioning of Full range 4.5-inch or better loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency range (-10dB) of 70Hz to 17kHz; Power handling of 160 Watt peak; Nominal dispersion of 90°(H) x 80°(V); Sensitivity of 85 dB SPL and Max SPL of 108 dB SPL peak or better; Nominal impedance of 8 ohms and Integral multi-tap Transformer with selectable tap settings of 3/5/10/20/40W@70V &amp; 100V or better. The loudspeaker system shall be enclosed in engineered-plastics and a powder-coated steel grille. UL-1480 rated and EN54-24 compliant for Life safety/VA applications. <b>Make :- Bose/QSC/JBL /Tannoy.</b></p>

8	<p>Supply, installation, testing and commissioning of Two-way Small Format high SPL IP55 rated (as per IEC 60529) all weather surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 80 Hz - 18 kHz or better; Nominal Dispersion : 120°H x 60°V (rotatable Horn); Long term Power handling of 1000W peak or more; Sensitivity : 93 dB; Max SPL : 123dB Peak; Nominal Impedance of 8 ohms and Integral multi-tap Transformer with selectable tap settings of 10/20/40/80W@70V &amp; 100V. The loudspeaker system shall be comprised of a Powder-coated finish stainless steel grille with Two-part spray polyurea coating Enclosure; Dual 6.5-inch woofer; Single 2-inch voice coil high-frequency compression driver; U-bracket shall be included complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make :- Bose/QSC/JBL / Renkus-Heinz</b></p>	<p>Supply, installation, testing and commissioning of Two-way Small Format high SPL surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 80 Hz - 18 kHz or better; Nominal Dispersion : 100°H x 60°V, Long term Power handling of 700W peak or more; Sensitivity : 92 dB; Max SPL : 123dB Peak; Nominal impedance of 8 ohms. Dual 6.5-inch or single 8" woofer or better; Single 1-inch voice coil high-frequency compression driver; U-bracket shall be included complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Bose/QSC/JBL/Renkus-Heinz/Tannoy.</b></p>
9	<p>Supply, installation, testing &amp; Commissioning of GOOSENECK WITH BASE MIC cardioid electret condenser microphone with 500mm Length or better and a filter in the microphone grille for suppressing wind and pop noises. A programmable button shall operate in the operating modes ON/OFF, Push-To-Talk and Push-To-Mute modes. on board selectable low-cut filter to suppress low frequency noise. The LED ring to display the microphone status may be deactivated when needed. The microphone shall operate with phantom power P12, P24 or P48. A preamp with shall be integrated in the base. The housing shall be black, free from reflections and completely made of metal. The frequency response shall be 50 to 19,000 Hz. The open circuit voltage shall be 17 mV/Pa or better. The nominal impedance shall be around 200 ohms complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser</b></p>	<p>Supply, installation, testing &amp; Commissioning of GOOSENECK WITH BASE MIC cardioid electret condenser microphone with 500mm Length or better and a filter in the microphone grille for suppressing wind and pop noises. A programmable button shall operate in the operating modes ON/OFF, Push-To-Talk and Push-To-Mute modes. on board selectable low-cut filter to suppress low frequency noise. The LED ring to display the microphone status may be deactivated when needed. The microphone shall operate with phantom power P12, P24 or P48. A preamp with shall be integrated in the base. The housing shall be black, free from reflections and completely made of metal. The frequency response shall be 50 to 19,000 Hz. The open circuit voltage shall be 17 mV/Pa or better. The nominal impedance shall be around 200 ohms complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser/AKG</b></p>

10	<p>Supply, installation, testing &amp; Commissioning of wireless Lapel microphone, with (UHF) Diversity receiver, 12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 50mW or Better , Polar Pattern :- Omnidirectional, Carrier frequency range 500Mhz to 865Mhz, Frequency response 45–15kHz, Mute Button on Transmitter, Battery Operation time Minimum 8hr , Should have Charging Contact in Body pack Transmitter, Receiver dynamic range 106dB (A-weighted) switching bandwidth Minimum 40Mhz Or better complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser</b></p>	<p>Supply, installation, testing &amp; Commissioning of wireless Lapel microphone, with (UHF) Diversity receiver, 12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 30/50mW or Better , Polar Pattern :- Omnidirectional, Carrier frequency range 500Mhz to 865Mhz, Frequency response 45–15kHz, Mute Button on Transmitter, Battery Operation time Minimum 8hr , Should have Charging Contact in Body pack Transmitter, Receiver dynamic range 106dB (A-weighted). complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser/AKG</b></p>
11	<p>Supply, installation, testing &amp; Commissioning of wireless Handheld microphone, with (UHF) Diversity receiver, 12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output typ.50mW or Better , THD, total harmonic distortion &lt; 1 % , Signal-to-noise ratio &gt; 103 dB(A)Polar Pattern :- Omnidirectional, Carrier frequency range 548Mhz to 865Mhz, Frequency response (Microphone) 80...16000 Hz , Switching bandwidth 24 MHz (13 MHz in range E), Mute Button on Transmitter, Battery Operation time Minimum 8hr , Sound pressure level (SPL) 149 dB complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser</b></p>	<p>Supply, installation, testing &amp; Commissioning of wireless Handheld microphone, with (UHF) Diversity receiver, 12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output typ.30/50mW or Better , THD, total harmonic distortion &lt; 1 % , Signal-to-noise ratio &gt; 103 dB(A)Polar Pattern :- Omnidirectional, Carrier frequency range 548Mhz to 865Mhz, Frequency response (Microphone) 80...16000 Hz , Mute Button on Transmitter, Battery Operation time Minimum 8hr , Sound pressure level (SPL) 149 dB complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Beyerdynamic/Shure/Sennheiser/AKG</b></p>
12	<p>Supply, installation, testing &amp; Commissioning of 4 way Antenna Distribution System.The Antenna Splitter shouldsupport upto 4 Receivers,it shouls split signal from 2 Antennas to 4 wireless microphones receiversor more ,it should be able to power upto 4 connected receivers ,full true diversity support,should support UHF range from 470 MHZ to 870 MHZ or more,Should come with power supply as required,should be from the same OEM as wireless microphones for 100 % compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Beyerdynamic/Shure/Sennheiser</b></p>	<p>Supply, installation, testing &amp; Commissioning of 4 way Antenna Distribution System. The Antenna Splitter should supportup to 4 Receivers, itshould split signal from 2 Antennas to 4 wireless microphones receivers or more ,it should be able to power upto 4 connected receivers ,full true diversity support, should support UHF range from 470 MHZ to 870 MHZ or more, Should come with power supply as required, should be from the same OEM as wireless microphones for 100 % compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Beyerdynamic/Shure/Sennheiser/AKG</b></p>
13	<p>Supply, installation, testing &amp; Commissioning of Passive Directional Antenna ,the antenna should come built-in 3 dB of more gain,should be from the same OEM as wireless microphones for 100% compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser</b></p>	<p>Supply, installation, testing &amp; Commissioning of Passive Directional Antenna ,the antenna should come built-in 3 dB of more gain, should be from the same OEM as wireless microphones for 100% compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser/AKG</b></p>

14	Supply, installation, testing & Commissioning of Instrument Microphone with high-frequency reproduction Polar Pattern: Cardioid, Frequency response : 33-19,000 Hz, Open circuit voltage : 2.7 mV/Pa (-51.4 dBV), Nominal impedance : 600 $\Omega$ , Load impedance : $\geq 2$ k $\Omega$ , Connection : XLR, 3-pin, male, etc complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser</b>	Supply, installation, testing & Commissioning of Instrument Microphone with high-frequency reproduction Polar Pattern: Cardioid, Frequency response : 33-19,000 Hz, Open circuit voltage : 2.7 mV/Pa (-51.4 dBV), Nominal impedance : 600 $\Omega$ , Load impedance : $\geq 2$ k $\Omega$ , Connection : XLR, 3-pin, male, etc complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser/AKG</b>
15	Supply, installation, testing & Commissioning of Wired Vocal Microphone with On/Off switch, Transducer type: Dynamic, Polar pattern: Super cardioid, Frequency response: 30 - 18,000 Hz, Open circuit voltage : 2.5 mV/Pa (-52 dBV), Nominal impedance 600 $\Omega$ , Connection: XLR, 3-pin, male, etc. complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser</b>	Supply, installation, testing & Commissioning of Wired Vocal Microphone with On/Off switch, Transducer type: Dynamic, Polar pattern: Super cardioid, Frequency response: 30 - 18,000 Hz, Open circuit voltage : 2.5 mV/Pa (-52 dBV), Nominal impedance 600 $\Omega$ , Connection: XLR, 3-pin, male, etc. complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Makes:- Beyerdynamic/Shure/Sennheiser/AKG</b>
18	Supply, installation, testing & Commissioning of 16 in 8 out Analog I/O Digital stagebox as the same OEM and compatible with offered Digital Mixer. Shall offer pre-amp control and a redundant mode connection complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make: Yamaha/Allen &amp; Health/Digico.</b>	Supply, installation, testing & Commissioning of 16 in 8 out Analog I/O Digital stage box as the same OEM and compatible with offered Digital Mixer. Shall offer pre-amp control and a redundant mode connection complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make: Yamaha/Allen &amp; Health/Digico/Soundcraft.</b>
19	Supply, installation, testing & Commissioning of Digital Audio Mixer with 32-40 input Digital Mixing Console and USB Interface and 32 programmable Preamps, 24 or better Motorized Faders, 40 DSP input channels (32 mono inputs and 4 stereo channels/returns), Channel LCD's, FireWire/USB Audio Interface and iPad/iPhone* Remote Control include I/O Box with 16 Remote-Controllable Preamps, Including Mini Stagebox 16 or 32 Channel combine high-quality components with a streamlined design, making it easy to add multiple channels of remote- controlled I/O to Digital mixing console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make: Yamaha/Allen &amp; Health/Digico.</b>	Supply, installation, testing & Commissioning of Digital Audio Mixer with 32-40 input Digital Mixing Console and USB Interface and 32 programmable Preamps, 24 or better Motorized Faders, 40 DSP input channels (32 mono inputs and 4 stereo channels/returns), Channel LCD's, FireWire/USB Audio Interface and iPad/iPhone* Remote Control include I/O Box with 16 Remote-Controllable Preamps, Including Mini Stage box 16 or 32 Channel combine high-quality components with a streamlined design, making it easy to add multiple channels of remote- controlled I/O to Digital mixing console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make: Yamaha/Allen &amp; Health/Digico/Soundcraft</b>
20	Supply, installation, testing & Commissioning of Dante Digital Audio I/O card for offered digital mixer. Shall offer gigabit redundant Ethernet connection ports for bidirectional audio upto 64x64 channels. <b>Make: Yamaha/Allen &amp; Health/Digico.</b>	Supply, installation, testing & Commissioning of Dante Digital Audio I/O card for offered digital mixer. Shall offer gigabit redundant Ethernet connection ports for bidirectional audio upto 64x64 channels. <b>Make: Yamaha/Allen &amp; Health/Digico/Soundcraft</b>

21	<p>Supply, installation, testing &amp; Commissioning of AEC capable Digital Audio Conferencing Processor with at least 12 AEC Mic/Line inputs &amp; 8 analog outputs, 24 Bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : &lt; 0.002 % or better ; Frequency Response 20 Hz - 20 kHz ;Dynamic Range &gt; 115 dB or better; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; 32x32 or more Bidirectional DANTE Audio Networking ports, Shall include standard Connectivity features like VOIP, POTS, USB Audio etc. inbuilt DSP features like Conference room Routers, Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates , Source selectors etc. Shall Support at least 15 remote Zone controllers complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Bose /QSC/BSS/Renkus-Hienz</b></p>	<p>Supply, installation, testing &amp; Commissioning of AEC capable Digital Audio Conferencing Processor with at least 12 AEC Mic/Line inputs &amp; 8 analog outputs, 24 Bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : &lt; 0.002 % or better ; Frequency Response 20 Hz - 20 kHz ;Dynamic Range &gt; 115 dB or better; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; 32x32 or more Bidirectional DANTE/Digital Audio Networking ports, Shall include standard Connectivity features like VOIP, POTS, USB Audio etc. inbuilt DSP features like Conference room Routers, Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates, Source selectors etc. Shall Support at least 15 remote Zone controllers complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Bose /QSC/BSS/Biamp</b></p>
22	<p>Supply, installation, testing &amp; Commissioning of 8 channel class D Networkable Power amplifier with a Max Output Power of 8x500W@8 ohms, or bridged mode output power of 4x 1000W @ 8/4 ohms. 20Hz - 20 KHz, SNR of 102dB and THD + N of &lt;0.4% with built in protection such as Limiters, Temperature, DC, Short Circuit, Peak Current Limiters, Turn on delay etc. Built in DSP for Matrix routing, Speaker equalization, Delays, Array EQs etc complete with Ethernet Port for Network Control, programming and monitoring. Shall offer optional Network audio connectivity (Dante or CobraNet) through expansion slot complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Bose/QSC/Crowm/Renkus-Hienz</b></p>	<p>Supply, installation, testing &amp; Commissioning of 8 channel class D Networkable Power amplifier with a Max Output Power of 8x500W@8 ohms, or bridged mode output power of 4x 1000W @ 8/4 ohms. 20Hz - 20 KHz, SNR of 102dB and THD + N of &lt;0.4% with built in protection such as Limiters, Temperature, DC, Short Circuit, Peak Current Limiters, Turn on delay etc. Built in DSP for Matrix routing, Speaker equalization, Delays, Array EQs etc complete with Ethernet Port for Network Control, programming and monitoring. complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Bose/QSC/Crowm/Labgruppen/Powersoft</b></p>

23	Supply, Installation, testing and commissioning of integrated high Impedance Class D Dual Zone Amplifier with output power of 2 x 120 W @ 70/100 V ; Frequency Response - 55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz) ; THD+N - ≤1 % (at full rated power); Channel Separation (Crosstalk) - ≤-60 dBV (below rated power, 1 kHz); A/D and D/A Converters - 24-bit / 48 kHz; Audio Latency - 10.4 ms - (any input to speaker output or aux output); THD <0.3% at rated power. Channel Separation ≤ -60 dBV (below rated power, 1 kHz), Dynamic range > 88 dB. Maximum Input Level : +10 dBV or better. 1 balanced page/priority input, 3 unbalanced line inputs; built in loudspeaker EQs. Shall include output for expansion amplifier and remote controller (Wired) for source as well as volume control complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:- Bose/QSC/JBL/Renkus-Hienz</b>	Supply, Installation, testing and commissioning of integrated high impedance Class D Dual Zone Amplifier with output power of 2 x 120 W @ 70/100 V ; Frequency Response - 55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz) ; THD+N - ≤1 % (at full rated power); Channel Separation (Crosstalk) - ≤-60 dBV (below rated power, 1 kHz); A/D and D/A Converters - 24-bit / 48 kHz; Audio Latency - 10.4 ms - (any input to speaker output or aux output); THD <0.3% at rated power. Channel Separation ≤ -60 dBV (below rated power, 1 kHz), Dynamic range > 88 dB. Maximum Input Level : +10 dBV or better. 1 balanced page/priority input, 3 unbalanced line inputs; built in loudspeaker EQs. Shall include output for expansion amplifier and remote controller (Wired) for source as well as volume control complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:- Bose/QSC/Crowm/Labgruppen/Powersoft</b>
25	Supply, installation, testing & Commissioning of 3' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Liberty AV/Crestron/Extron</b>	Supply, installation, testing & Commissioning of 3' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:- Crestron/Extron/Lightware/AMX/Kramer</b>
26	Supply, installation, testing & Commissioning of 6' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Liberty AV/Crestron/Extron</b>	Supply, installation, testing & Commissioning of 6' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Crestron/Extron/Lightware/AMX/Kramer</b>
27	Supply, installation, testing & Commissioning of 9' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Liberty AV/Crestron/Extron</b>	Supply, installation, testing & Commissioning of 9' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Crestron/Extron/Lightware/AMX/Kramer</b>
28	Supply, installation, testing & Commissioning of 15' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:-Liberty AV/Crestron/Extron</b>	Supply, installation, testing & Commissioning of 15' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:- Crestron/Extron/Lightware/AMX/Kramer</b>



29	Supply, installation, testing & Commissioning of minimum 14 AWG or thicker Speaker Cable with copper conductors and PVC Jacket complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make ; - Liberty AV/Belden/Extron</b>	Supply, installation, testing & Commissioning of minimum 14 AWG or thicker Speaker Cable with copper conductors and PVC Jacket complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make :- Make:-Crestron/Extron/Kramer</b>
30	Supply, installation, testing & Commissioning of 24 AWG or better CAT6A LSZH cable complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make- Liberty AV/Belden/Extron</b>	Supply, installation, testing & Commissioning of 24 AWG or better CAT6A support 10 gig data LSZH cable complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make- Crestron/Extron/Derwiser/AMX/Kramer</b>
31	Supply, installation, testing & Commissioning of Shielded microphone cable. 2 core + Shield, 23 AWG or better complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make ; - Liberty AV/Belden/Extron</b>	Supply, installation, testing & Commissioning of Shielded microphone cable. 2 core + Shield, 23 AWG or better complete in all respect with required accessories as desired by Engineer- In-Charge. <b>Make ; - Crestron/Extron/Kramer</b>
32	Supply, installation, testing & Commissioning of USB Active cable of 10 mtr or more length complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make ; - Liberty AV/Belden/Extron</b>	Supply, installation, testing & Commissioning of USB Active cable of 10 mtr. or more length complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make ; - Crestron/Extron/Lightware/Kramer/AMX</b>
35	Supply, installation, testing & Commissioning of Projector Laser phosphor, 1920X1200 native resolution, 13,000 lm to 17000 lumens (13,600 lm center minimum) laser light source projector, Contrast Ratio- Infinite:1, Illumination life 20000 hours min , Colour Space sRGB 100% (Picture mode: sRGB), with HDMIx2 , HDBT, Optional adaptor slot for 3GSDI Input Adaptor (BKM-PJ20), Monitor output for Input A/Input B Connector: Mini Dsub 15-pin (female), LAN, USB Type- A x1 , Type-B x1 , Lens throw ration 1.85 : 1 to 2.44 : 1 or better, Aperture f/2.20 to 2.60 or better including Compatible Projector Mount as per site/ design complete in all respect with required accessories as desired by Engineer- In- Charge. <b>make:- Sony/Barco/Christie/Digital projection</b>	Supply, installation, testing & Commissioning of DLP Laser Projector, 1920X1200 WUXGA native resolution, 13,500 lumens or better laser light source projector, Contrast Ratio - 100000:1, with HDMIx2 , 1 HDBbaseT, Control RS232/Ethernet. Lens throw ratio 1.85 : 1 to 2.44 :1 or better, including Compatible Projector Mount as per site requierment design complete in all respect with required accessories as desired by Engineer- In- Charge. <b>make:- Barco/Christie/Digital projection</b>

37	<p>Supply, installation, testing &amp; Commissioning of Smart metallic podium with space for optional gooseneck mic , separate drawer for documents, fitted with i5 PC (8GB RAM, 1TB HDD, Wi-Fi enabled, and licensed Window 10 Professional pre loaded with 4 USB port, Licenced microsoft word, antivirus and other required softwares for functioning of auditorium softwares, HDMI port and audio port, fitted with 23" Interactive Touch Monitor for Live annotation. FHD / UHD Resolution. Brightness: 250 cd/m2, contrast ratio: 1000:1 or better. Viewing angle : 178°(v) 178°(h) or better. Input: 1x HDMI. USB Interface. To be supplied with complete accessories wireless keyboard and wireless mouse with required capacity UPS complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- HP/DELL/IBM</b></p>	<p>Supply, installation, testing &amp; Commissioning of Smart metallic podium with space for optional gooseneck mic , separate drawer for documents, fitted with i7 12 Gen PC (8GB RAM, 500GB SSD, inbuiltWi-Fi enabled, and licensed Window 10 Professional pre loaded with 4 USB port, LicensedMicrosoft word, antivirus and other required softwares for functioning of auditorium softwares, HDMI port and audio port, fitted with 23" Interactive Pen Touch Monitor (Wacom or Equivalent) for Live annotation with tilt motorized mechanism. FHD / UHD Resolution. Brightness: 250 cd/m2, contrast ratio: 1000:1 or better. Viewing angle : 178°(v) 178°(h) or better. Input: 1x HDMI. USB Interface. To be supplied with complete accessories wireless keyboard and wireless mouse with 1 kVA double battery or better capacity UPS complete in all respect with required accessories as desired by Engineer- In- Charge. Podium design with logo has to be approved by EIC before supply.</p> <p><b>Make:- PC (HP/DELL/IBM)</b>  <b>Make :- UPS (APC/Microteck/Luminous)</b></p>
38	<p>Supply, installation, testing &amp; Commissioning of 55"4K (3,840 x 2,160), Direct (Full Array LED), Professional Slim Blade Stand Display with 4K HDR Processor X1,HDR (HDR10, HLG, Dolby Vision), Native Contrast ratio upto 6,000:1, Response time 6ms, Peak Brightness 850 cd/m<sup>2</sup>, 4K XReality PRO,TRILUMINOS DISPLAY technology, 24/7 Portrait ,Tilt functionality, Flexible Content Layout with HTML5, 16GB On Board Storage, Motionflow XR,HDCP 2.3 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 20W Speakers / Android™ OS system, Viewing angle 178 degree, Pro Mode, Pro Display using Apple AirPlay &amp; Chromecast complete in all respect with required accessories as desired by</p>	<p>Supply, installation, testing &amp; Commissioning of 55"4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m<sup>2</sup> or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Sony/Samsung/LG.</b></p>

40	<p>Supply, installation, testing &amp; Commissioning of 43 inch 4K (3,840 x 2,160), Professional Slim Blade Stand Display with 4K HDR Processor X1, HDR (HDR10, HLG, Dolby Vision), Direct LED, Dynamic ,Birghtness 440nits , contrast ratio upto 400,000:1, 4K X-Reality PRO, TRILUMINOS PRO technology, 24/7 Portrait ,Tilt functionality, Flexible Content Layout with HTML5, 16GB On Board Storage, Motionflow XR, HDCP 2.3 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 20W Speakers / Android™ OS system, Viewing angle 178 degree, Pro Mode, Pro Display using Apple AirPlay &amp; Chromecast, Good quality/ OEM frame /bracket for 43" display solid panel complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Christie/Sony/NEC/Samsung</b></p>	<p>Supply, installation, testing &amp; Commissioning of 43"4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m² or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Sony/Samsung/LG.</b></p>
41	<p>Supply, installation, testing &amp; Commissioning Of Monitor 70" LCD Panel Resolution: 1920 x 1080 pixels, Max Display colours: 1.07 Bn Colours, Backlight: LED-Edge Lit, Brightness: 350 cd/m² 16x7 type operation professional grades. Built-in speakers, Input terminals-HDMI x 3, Mini D-Sub 15 pin x 1, Component Video RCA ( Y, Cb/Pb, Cr/Pr,) x 1, Composite Video RCA Pin x 2, RS-232 x 1, USB x 1. Output terminals- RCA Pin L/R x 1, Digital Audio Output (Optical) x 1. Approved, Good quality/ OEM frame /bracket for 70" display solid panel complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Christie/Sony/NEC/Samsung</b></p>	<p>Supply, installation, testing &amp; Commissioning of 70"/75" 4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m² or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Sony/Samsung/LG.</b></p>
42	<p>Supply, installation, testing &amp; Commissioning of of 4K/UHD 60 fps PTZ Camera specialised for video conferencing having minimum 20x optical zoom, 12x Digital Zoom, 1/2.5" 8.5 MP CMOS Sensor. featuring HDMI/ SDI/Ethernet output, Control: RS232/Ethernet. Including wall/ceiling mounting accessories complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make;- Lumens/Vaddio/Sony</b></p>	<p>Supply, installation, testing &amp; Commissioning of 4K/UHD 60 fps PTZ Camera specialized for video conferencing having minimum 20x optical zoom, 12x Digital Zoom, 1/2.5" 8.5 MP CMOS Sensor. featuring HDMI/ SDI/Ethernet output, Control: RS232/Ethernet. Including wall/ceiling mounting accessories complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make;- Lumens/Bosch/Axis/Pelco</b></p>

43	<p>Supply, installation, testing &amp; Commissioning of hardware based Video Recording and streaming device for recording all kind of meetings including video conference. 02 or more HDMI Input, 01 or more HDMI/DVI input. one or more analog video input. one or more balanced/unbalanced analog audio Input, Minimum two window Picture-in-Picture (PIP), Picture by Picture. Resolution minimum 1080P@30fps or better. Built in stroage of minimum 30GB and option for external and network storage. Should also support built instreaming. PUSH/PULL, RTSP/RTMP, Unicast/Multicast. RS232/LAN control complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Extron/Lumens/Mediasite</b></p>	<p>Supply, installation, testing &amp; Commissioning of hardware-based Video Recording and streaming device for recording all kind of meetings including video conference. 02 or more HDMI Input, 01 or more HDMI/DVI input. one or more analog video input. one or more balanced/unbalanced analog audio Input, Minimum two window Picture-in-Picture (PIP), Picture by Picture. Resolution minimum 1080P@30fps or better. Built in or External storage of minimum 30GB and option for external and network storage. Should also support built instreaming. PUSH/PULL, RTSP/RTMP, Unicast/Multicast. RS232/LAN control complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Extron/Lumens/Mediasite/Aten</b></p>
44	<p>Supply, installation, testing &amp; Commissioning of 2 gang Wallplate type AVOIP transmitter, 4K @60 Hz, HDMI/VGA Auto switching, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Liberty AV/Crestron/Extron</b></p>	<p>Supply, installation, testing &amp; Commissioning of 2 gang Wall plate type AVOIP transmitter, 4K @60 Hz, 4:4:4, HDMI/VGA Auto switching, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K ,4:4:4, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
45	<p>Supply, installation, testing &amp; Commissioning Box type HDMI AVOIP Transmitter, 4K @60 Hz, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt. 7.1 multichannel audio, Up &amp; Down scaling capability, Supports video walls with bezel compensation, IR in and out for 2 way IR control complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Liberty AV/Crestron/Extron</b></p>	<p>Supply, installation, testing &amp; Commissioning Box type HDMI AVOIP Transmitter, 4K @60 Hz, 4:4:4, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K 4:4:4, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt. 7.1 multichannel audio, Up &amp; Down scaling capability, Supports video walls with bezel compensation in and out for 2 way IR control complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>

46	<p>Supply, installation, testing &amp; Commissioning of AVoIP Receiver (Decoder) with industry standard codec. Shall support HDMI signals up to 4K HDR, HDCP 2.2 compliant, and 7.1 multichannel audio, Upscaling upto 4K resolutions. RS232 port, bidirectional IR support. Video wall mode with Bezel compensation, USB connection passthru. Integrated scaler with up &amp; down scaling capability up to 4K30 4:4:4 POE powered, variable or fixed data rate complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of AVoIP Receiver (Decoder) with industry standard codec. Shall support HDMI signals up to 4K 4:4:4 HDR, HDCP 2.2 compliant, and 7.1 multichannel audio, Upscaling upto 4K resolutions. RS232 port, bidirectional IR support. Video wall mode with Bezel compensation, USB connection passthru. Integrated scaler with up &amp; down scaling capability up to 4K30 4:4:4 POE powered, variable or fixed data rate complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
47	<p>Supply, installation, testing &amp; Commissioning of Controller for AVOIP devices having Supports resolutions up to 4K@60 4:4:4 with HDR, Integrated up or down scaling for maximum display compatibility, HDMI connectivity for source/sink I/O &amp; CEC ,HDMI Loop output on encoder, Video wall up to 16X16 configurations are supported with bezel compensation, Low latency &amp; fast switching time, RS-232 pass- through ports, Fully compatible with 3rd party control systems, Audio embed/de-embedding ports, Supports most multi-channel audio formats, USB, RS-232 &amp; Audio may be routed independent of the video, Decoder equipped with an 4K auto-scaler, Uses JPEG2000 video codec, Dante Audio Support, Configuration license upto 50 IP equipment complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of Controller for AVOIP devices having Supports resolutions up to 4K@60 4:4:4 with HDR, ``Integrated up or down scaling for maximum display compatibility, HDMI connectivity for source/sink I/O &amp; CEC ,HDMI Loop output on encoder, Low latency &amp; fast switching time, RS-232 pass-through ports, Fully compatible with 3rd party control systems, Audio embed/de-embedding ports, Supports most multi-channel audio formats, USB, RS-232 &amp; Audio may be routed independent of the video, Decoder equipped with an 4K auto-scaler, Uses JPEG2000 video codec, Dante Audio Support, Configuration license upto 50 IP equipment complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
48	<p>Apple lightning to HDMI female, Apple USB-C to HDMI female, genric USB-C to HDMI complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Liberty AV/Crestron/Extron.</b></p>	<p>Apple lightning to HDMI female, Apple USB-C to HDMI female, genric USB-C to HDMI complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer/Apple</b></p>
49	<p>Supply, installation, testing &amp; Commissioning of 10-11 inch Multi-Touch display(iPad) with IPS technology with Liquid Retina display, Resolution:2388x1668-pixel resolution at 264 pixels per inch (ppi), 600 nits brightness. Should be provided with docking station complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Apple/Samsung/ HP or equivalent make approved by EIC</b></p>	<p>Supply, installation, testing &amp; Commissioning of 10-11 inch Multi-Touch display(iPad) with IPS technology with Liquid Retina display, Resolution:2388x1668-pixel resolution at 264 pixels per inch (ppi), 600 nits brightness. Should be provided with docking station complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Apple or equivalent make approved by EIC</b></p>

50	<p>Supply, installation, testing &amp; Commissioning of Fully Programmable 10" wall mount capacitive touchscreen interface for switching and control of AV equipment. TFT Active matrix Color LCD display, Resolution 1280x800 or higher, Color depth : 24 bit, 16.7 million colors or higher, Brightness: 400 nits (cd/m2) or higher, Viewing angle: ±80° horizontal, ±80° vertical or more, Capacitive Touch screen. Memory: 4GB Flash, SD RAM: 2 GB. 10/100/1000Base-T female RJ-45 connector. Shall be supplied with Power supply or POE Inejctor along with wall mounting accessories. Shall meet regulatory compliances: CE, c-UL, UL complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of Fully Programmable 10" wall mount capacitive touchscreen interface for switching and control of AV equipment. TFT Active matrix Color LCD display, Resolution 1280x800 or higher, Color depth : 24 bit, 16.7 million colors or higher, Brightness: 400 nits (cd/m2) or higher, Viewing angle: ±80° horizontal, ±80° vertical or more, Capacitive Touch screen. Memory: 4GB Flash, SD RAM: 2 GB. 10/100/1000Base-T female RJ-45 connector. Shall be supplied with Power supply or POE Inejctor along with wall mounting accessories. Shall meet regulatory compliances: CE, c-UL, UL complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
51	<p>Supply, installation, testing &amp; Commissioning of fully programmable 6-8 button wall mount automation system controller,shall work over standard RJ-45 point to point cabling complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make: Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of fully programmable 6-8 button wall mount automation system controller,shall work over standard RJ-45 point to point cabling complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make: Crestron/Extron/Lightware/AMX/Kramer</b></p>
52	<p>Supply, installation, testing &amp; Commissioning of IR receivers compatible with offered automation system. Complete with necessary cable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of IR receivers compatible with offered automation system. Complete with necessary cable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
53	<p>Supply, installation, testing &amp; Commissioning of AVoIP system controller with RS-232 &amp; Network interfaces. Complete with subscription licenses for all end-points for a period of at least 10 years. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>Make:-Liberty AV/Crestron/Extron.</b></p>	<p>Supply, installation, testing &amp; Commissioning of AVoIP system controller with RS-232 &amp; Network interfaces. Complete with subscription licenses for all end-points for a period of at least 10 years. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>make:- Crestron/Extron/Lightware/AMX/Kramer</b></p>
54	<p>Supply, installation, testing &amp; Commissioning of gigabit L II with minimum 48 ports or better or as required for auditorium design managed switch with combo SFP ports. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>MAKE :-Netgear/Cisco/Allied Telesis</b></p>	<p>Supply, installation, testing &amp; Commissioning of gigabit L II with minimum 48 ports POE switch or better or as required for auditorium design managed switch with combo SFP ports. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>MAKE :-Netgear/Cisco/Allied Telesis</b></p>

55	Supply, installation, testing & Commissioning of of HDMI to USB-C converter. Shall support 4K resolutions complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make;- Extron/Liberty AV/Crestron</b>	Supply, installation, testing & Commissioning of of HDMI to USB-C converter. Shall support 4K resolutions complete in all respect with required accessories as desired by Engineer- In- Charge. <b>make:- Crestron/Extron/Lightware/AMX/Kramer</b>
56	Supply, installation, testing & Commissioning of USB extender set that extends computer USB 1.1 and USB 2.0 signals up to 100m (330 ft) over twisted pair cabling to four remote devices. The extender set utilizes inexpensive twisted pair cabling and has a throughput of up to 480Mbps. The extender set is perfect for keyboard and mouse extension, remote data ports, minimum 4 USB A on transmitter and 1 USB- Bon receiver, security applications and interactive white board applications complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:- ScreenBeam/Crestron/Extro</b>	Supply, installation, testing & Commissioning of USB extender set that extends computer USB 1.1 and USB 2.0 signals up to 100m (330 ft) over twisted pair cabling to four remote devices. The extender set utilizes inexpensive twisted pair cabling and has a throughput of up to 480Mbps. The extender set is perfect for keyboard and mouse extension, remote data ports, minimum 4 USB A on transmitter and 1 USB- Bon receiver, security applications and interactive white board applications complete in all respect with required accessories as desired by Engineer- In- Charge. <b>make:- Crestron/Extron/Lightware/AMX/Kramer</b>
57	Supply, installation, testing & Commissioning of Motorised winch to use as Lighting bar of 7.5 mtr., made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr, With cable retractor & cable trays complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Motorised winch to use as Lighting bar of 7.5 mtr., made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr, With cable retractor & cable trays complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Leksa, Canara, Effectron)</b>
58	Supply, installation, testing & Commissioning of Fixed Light bar of 10 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided With cable trays complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Fixed Light bar of 10 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided With cable trays complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>

59	Supply, installation, testing & Commissioning of Motorised winch to use as Utility bar of 8 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Motorised winch to use as Utility bar of 8 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
60	Supply, installation, testing & Commissioning of Direct lighting distribution board panel having incomer 100 A 4 pole MCCB or 63 A 4pole/TPN , outgoing 1 no. 32 A TP MCB & 72 nos 10-16 Amp SP MCBs. Necessary phase indicator lamp, meter , and Busbar to be provided. The panel must have undergone through various chemical treatment to keep them rust free and dulypowder coated in Siemens Grey finish. MCB's to be used Siemens, schnieder, ABB, Legrand complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Direct lighting distribution board panel having incomer 100 A 4 pole MCCB or 63 A 4pole/TPN , outgoing 1 no. 32 A TP MCB & 72 nos 10-16 Amp SP MCBs. Necessary phase indicator lamp, meter , and Busbar to be provided. The panel must have undergone through various chemical treatment to keep them rust free and dulypowder coated in Siemens Grey finish. MCB's to be used Siemens, schnieder, ABB, Legrand complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Leksa, Canara, Effectron)</b>
61	Supply, installation, testing & Commissioning of MS lighting junction box made up of 16SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finishand5/15A Anchor Socket with suitable glands complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of MS lighting junction box made up of 16SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finishand5/15A Anchor Socket with suitable glands complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
62	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 16 SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finishand fitted with 3/5 pin XLR DMX connector complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 16 SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finishand fitted with 3/5 pin XLR DMX connector complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>



63	MS Fabricated power junction box (PJB) for terminating the motor wires undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finish complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	MS Fabricated power junction box (PJB) for terminating the motor wires undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finish complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
64	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 10 feeder Motor Control Centre Panel with 125A McCabe as incomer and 32A TP MCB as outgoing necessary meterings, contactors etc. to control the Light Bars, Frill Bars etc. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 10 feeder Motor Control Centre Panel with 125A McCabe as incomer and 32A TP MCB as outgoing necessary meterings, contactors etc. to control the Light Bars, Frill Bars etc. <b>(Make: Leksa, Canara, Effectron)</b>
65	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 2 feeder Remote Control Panel with necessary indicators and terminal block for remote operations of curtains complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 2 feeder Remote Control Panel with necessary indicators and terminal block for remote operations of curtains complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
66	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
67	Supply, installation, testing & Commissioning of MS sheet metal fabricated power junction box undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 2 10amps 3 pin IEC socket, ON/OFF switch and necessary glands to power splitters and console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of MS sheet metal fabricated power junction box undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 2 10amps 3 pin IEC socket, ON/OFF switch and necessary glands to power splitters and console complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
68	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Leksa, Canara, Effectron)</b>

69	Supply, installation, testing & Commissioning of 200W LED Fresnel spot Light with 200mm dia German Lens with Lamp power - 200W , LED Type : COB LED, Color Temperature 3200K ,CRI > 95, spot - Flood Focus adjustment : Motorised, Beam angle - 10° - 50° Power Rating - IP 20 , Control Manual , DMX0-100% through manual and DMX , Channels - 2 channel DMX 512 , Power Supply - 100-240 V AC, 50/60Hz CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 200W LED Fresnel spot Light with 200mm dia German Lens with Lamp power - 200W , LED Type : COB LED, Color Temperature 3200K ,CRI > 95, spot - Flood Focus adjustment : Motorised, Beam angle - 10° - 50° Power Rating - IP 20 , Control Manual , DMX0-100% through manual and DMX , Channels - 2 channel DMX 512 , Power Supply - 100-240 V AC, 50/60Hz CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
70	Supply, installation, testing & Commissioning of 200W LED PARCAN with below specification : Lamp power - 200W , LED Type : COB LED, Color Temperature CW/WW , Power Rating - IP 20 , Control Manual , DMX, Channels - 2 channel DMX 512 , Power Supply - 100- 240 V AC, 50/60Hz , CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 200W LED PARCAN with below specification : Lamp power - 200W , LED Type : COB LED, Color Temperature CW/WW , Power Rating - IP 20 , Control Manual , DMX, Channels - 2 channel DMX 512 , Power Supply - 100- 240 V AC, 50/60Hz , CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
71	Supply, installation, testing & Commissioning of 54x3W LED par light complete with 8-channel DMX 512, high brightness mixing color evenly, stable performance with sound active auto, DMX, and power and DMX loop in and out option, undergone through 7 Tank chemical treatment to keep them rust free and, duly powder coated in black matt texture finish and technical specifications as below. Lamp - 54 x 3W RGBW LED, Power consumption – 150W, Power supply - 230/240V AC, Power cable - 3 core 1.5 sq. mm. copper PVC insulated, Channels - 1 Channel DMX-512, Beam angle - 25° (15°, 45° optional) Function - Manual dimming, DmX modes of operation. The work shall be completed in all respect as per sound engineering practice & Direction of EIC. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 54x3W LED par light complete with 8-channel DMX 512, high brightness mixing color evenly, stable performance with sound active auto, DMX, and power and DMX loop in and out option, undergone through 7 Tank chemical treatment to keep them rust free and, duly powder coated in black matt texture finish and technical specifications as below. Lamp - 54 x 3W RGBW LED, Power consumption – 150W, Power supply - 230/240V AC, Power cable - 3 core 1.5 sq. mm. copper PVC insulated, Channels - 1 Channel DMX-512, Beam angle - 25° (15°, 45° optional) Function - Manual dimming, DmX modes of operation. The work shall be completed in all respect as per sound engineering practice & Direction of EIC. <b>(Make: Leksa, Canara, Effectron)</b>
72	Supplying Installation testing & Commissioning of LED Bar Light having RGBWA output, 72 LED's 16R+ 16G+16B+ 8W+16A RGBWA LEDs, Angle : 30°x60°, Strobe + Duration Effect Engine, DMX- 512, Color LCD intuitive menu system, 90 - 240VAC, 240W - Power Consumption, complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supplying Installation testing & Commissioning of LED Bar Light having RGBWA output, 72 LED's 16R+ 16G+16B+ 8W+16A RGBWA LEDs, Angle : 30°x60°, Strobe + Duration Effect Engine, DMX- 512, Color LCD intuitive menu system, 90 - 240VAC, 240W - Power Consumption, complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Leksa, Canara, Effectron)</b>

73	Supply, installation, testing & Commissioning of 2x2 blinder matrix fixture with advanced COB LED technology light with Frequency : 50-60Hz, Power Consumption: 240W LEDs Qty : 4 pieces Light Color: Single color warm white (3200K)• Lifetime: Over 50,000 hours• Dimmer: 0~100% linearly adjustable Beam Angle: 30 degree Control mode: DMX512,Master/Slave, Auto Run, Sound active. IP Grade: IP20 Net Weight: 5kgs The work shall be completed in all respect as per sound engineering practice complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 2x2 blinder matrix fixture with advanced COB LED technology light with Frequency : 50-60Hz, Power Consumption: 240W LEDs Qty : 4 pieces Light Color: Single color warm white (3200K)• Lifetime: Over 50,000 hours• Dimmer: 0~100% linearly adjustable Beam Angle: 30 degree Control mode: DMX512,Master/Slave, Auto Run, Sound active. IP Grade: IP20 Net Weight: 5kgs The work shall be completed in all respect as per sound engineering practice complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
74	Supply, installation, testing & Commissioning of 200W LED Profile light 19 degree with below specifications :- Lamp Power : LED, 200W Power Supply : AC 110-230V, 50Hz Focus : Manual Focus , Beam Angle : 19° , Dimmer : 0-100% linearly adjustable manually focusable, high quality optical system,glass reflector. DMX Control protocol: DMX 512. , CRI : >90 , Dimming : 100 - 0% dimming • Control system : DMX,Auto run and master/slave, Working temp : 30-40 degree celcius,No noise fan of pccooler, Protection Rating : IP20 , CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 200W LED Profile light 19 degree with below specifications :- Lamp Power : LED, 200W Power Supply : AC 110-230V, 50Hz Focus : Manual Focus , Beam Angle : 19° , Dimmer : 0-100% linearly adjustable manually focusable, high quality optical system, glass reflector. DMX Control protocol: DMX 512., CRI:>90,Dimming: 100 - 0% dimming • Control system: DMX,Auto run and master/slave, Working temp : 30-40 degree celcius,No noise fan of pccooler, Protection Rating : IP20 , CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>
75	Supply, installation, testing & Commissioning of 310W 7R Beam moving head complete with MSR 7R Lamp, Prism, Gobos, Colour effect functions Pan : 540° (16 bit ) Tilt : 270°(16 bit ) Advanced moving system: fast, stable and quiet, auto X-Y repositioning, Shutter: 0 – 100% Dimming and variable strobe, Option of Male female DmX in/out through 3 & 5 Pins, 14 di chroic filters +open, Duo rainbow effect, 18 rotating, indexable, gobos+open, Rotating prism: Dual 8 Facet, DmX 5pin Connectors, Power Loop-in Loop-out Optional, Focus: motorized focus, 7 Pre built programming, Electronic Flicker free operation, Dimension 415 x 343 x 495mm, LED Display Indication complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Jhajra, Effectron, Canara)</b>	Supply, installation, testing & Commissioning of 310W 7R Beam moving head complete with MSR 7R Lamp, Prism, Gobos, Colour effect functions Pan : 540° (16 bit ) Tilt : 270°(16 bit ) Advanced moving system: fast, stable and quiet, auto X-Y repositioning, Shutter: 0 – 100% Dimming and variable strobe, Option of Male female DmX in/out through 3 & 5 Pins, 14 di chroic filters +open, Duo rainbow effect, 18 rotating, indexable, gobos+open, Rotating prism: Dual 8 Facet, DmX 5pin Connectors, Power Loop-in Loop-out Optional, Focus: motorized focus, 7 Pre built programming, Electronic Flicker free operation, Dimension 415 x 343 x 495mm, LED Display Indication complete in all respect with required accessories as desired by Engineer- In- Charge <b>(Make: Leksa, Canara, Effectron)</b>
76	Supply, installation, testing & Commissioning of 2000W Fog machine wire / remote / DMX 512, electronic control temperature. Smoke output 20000cuft/min @ 12Mtrs complete in all respect with required accessories complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Antari, Smoke Factory, Effectron, Satan)</b>	Supply, installation, testing & Commissioning of 2000W Fog machine wire / remote / DMX 512, electronic control temperature. Smoke output 20000cuft/min @ 12Mtrs complete in all respect with required accessories complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Leksa, Canara, Effectron)</b>

78	<p>Supply, installation, testing &amp; Commissioning of Rack mount photo isolator DMX splitter unit 1 DMX input and 6 isolated output with following specifications: complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p>Power Supply: 90-240V AC, 45-63Hz. Control: DMX 512 protocol. Control Signal input: 5 pin XLR female. Size: 482 x 44 x 128mm. Weight: 2Kg</p> <p><b>(Make: Jhajra, Effectron, Canara)</b></p>	<p>Supply, installation, testing &amp; Commissioning of Rack mount photo isolator DMX splitter unit 1 DMX input and 6 isolated output with following specifications: complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p>Power Supply: 90-240V AC, 45-63Hz. Control: DMX 512 protocol. Control Signal input: 5 pin XLR female. Size: 482 x 44 x 128mm. Weight: 2Kg.</p> <p><b>(Make: Leksa, Canara, Effectron)</b></p>
79	<p>Supply, installation, testing &amp; Commissioning of Lighting console shall support the processing of up to 1024 total DMX512 outputs by use of potentiometers for submasters, playbacks and effects as well as buttons to activate cues. The console shall support up to 250 control channels for the purpose of controlling dimmers for incandescent loads. The console shall support up to 30 automated luminaires with a maximum of 40 attributes each. Each intensity channel shall be controlled on a Highest Takes Precedence complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>(Make: Effectron, Canara, Philips,)</b></p>	<p>Supply, installation, testing &amp; Commissioning of Lighting console shall support the processing of up to 1024 total DMX512 outputs by use of potentiometers for submasters, playbacks and effects as well as buttons to activate cues. The console shall support up to 250 control channels for the purpose of controlling dimmers for incandescent loads. The console shall support up to 30 automated luminaires with a maximum of 40 attributes each. Each intensity channel shall be controlled on a Highest Takes Precedence complete in all respect with required accessories as desired by Engineer- In- Charge.</p> <p><b>(Make: Leksa, Canara, Effectron, Avolite)</b></p>
110	<p>Providing and fixing auditorium chairs as per specifications as below:</p> <p>The seat shall be made of Polyurethane Foam moulded with 1.5 <math>\pm</math> 0.1cm. thk. plywood insert and shall be upholstered with fabric. Approx. Seat Size shall be: Depth: 42.0cm. Width @ rear: 44.0cm. Width @ front: 41.0cm. The back assembly shall be flexing type and made of Polyurethane Foam moulded with MS. tubular frame insert and shall be upholstered with fabric and back cover. The insert shall be made of 01.9 <math>\pm</math> 0.02cm x 0.16 <math>\pm</math> 0.0.128cm. thk. MS tubular frame with flexible nylon straps running across the length and width of the frame. Approx. Back Size shall be: Height: 75:0cm, Width @ top: 34.5cm, Width @ seat level: 46.0cm. The HR polyurethane foam is moulded with density = 45 <math>\pm</math> 2 kg/m<sup>3</sup>. The backcover and mechanism cover shall be vacuum formed from black ABS sheets. The Armrest understructure shall be upholstered PU foam moulded with MS insert. Arm tops shall be made of black Integral Skin polyurethane with 50-70 Shore 'A' Hardness &amp; reinforced with wooden insert. Armrest width = 7.0 <math>\pm</math> 0.5cm and shall be offered as common/individual armrest between chairs. MS black powder coated (DFT 40-60 microns ) understructure with integrated, auto tip-up mechanism which folds the seat when not is use. Footprint area of base plate: made of HR steel 15.0 <math>\pm</math> 0.2cm X 22.0 <math>\pm</math> 0.2cm X 0.5 <math>\pm</math> 0.05cm thick. Backrest supporting beam width:</p>	<p>Providing and fixing auditorium chairs as per specifications as below:</p> <p>The seat shall be made of Polyurethane Foam moulded with 1.5 <math>\pm</math> 0.1cm. thk. plywood insert and shall be upholstered with fabric. Approx. Seat Size shall be: Depth: 42.0cm. Width @ rear: 44.0cm. Width @ front: 41.0cm. The back assembly shall be flexing type and made of Polyurethane Foam moulded with MS. tubular frame insert and shall be upholstered with fabric and back cover. The insert shall be made of 01.9 <math>\pm</math> 0.02cm x 0.16 <math>\pm</math> 0.0.128cm. thk. MS tubular frame with flexible nylon straps running across the length and width of the frame. Approx. Back Size shall be: Height: 75:0cm, Width @ top: 34.5cm, Width @ seat level: 46.0cm. The HR polyurethane foam is moulded with density = 45 <math>\pm</math> 2 kg/m<sup>3</sup>. The backcover and mechanism cover shall be vacuum formed from black ABS sheets. The Armrest understructure shall be upholstered PU foam moulded with MS insert. Arm tops shall be made of black Integral Skin polyurethane with 50-70 Shore 'A' Hardness &amp; reinforced with wooden insert. Armrest width = 7.0 <math>\pm</math> 0.5cm and shall be offered as common/individual armrest between chairs. MS black powder coated (DFT 40-60 microns ) understructure with integrated, auto tip-up mechanism which folds the seat when not is use. Footprint area of base plate: made of HR steel 15.0 <math>\pm</math> 0.2cm X 22.0 <math>\pm</math> 0.2cm X 0.5 <math>\pm</math> 0.05cm thick. Backrest supporting beam width: 46.0 <math>\pm</math> 0.2cm. (L) x 8.0 <math>\pm</math> 0.03cm. x</p>

	46.0 ±0.2cm.(L) x 8.0 ±0.03cm. x 4.0 ±0.03cm. x 0.2±0.16cm MS tube. Understructure shall be fixed to ground by anchors with washer and nut. The auditorium chair shall be designed to get mounted/grouted on floors with flooring specification as mentioned in flooring pre-requisite Godrej doc-no: STG 129368. Overall Dimensions of Chair shall be Seat Height - 46.5 cm, Height - 101.0 cm, Width & Depth of Chair Width(w1)-60.0cm(individual), width(W) - 53.0 cm.(common arm) and Depth-64.0cm.(normal) , Depth(D2)- 49.0(seat folded). The backseat shall be fixed and chair bottom shall be moveable complete in all respect with required accessories as desired by Engineer- In- Charge.( <b>Make-Penwalker, Godrej, Haworth</b> )	4.0 ±0.03cm. x 0.2±0.16cm MS tube. Understructure shall be fixed to ground by anchors with washer and nut. The auditorium chair shall be designed to get mounted/grouted on floors with flooring specification as mentioned in flooring pre-requisite Godrej doc-no: STG 129368. Overall Dimensions of Chair shall be Seat Height - 46.5 cm, Height - 101.0 cm, Width & Depth of Chair Width(w1)-60.0cm(individual), width(W) - 53.0 cm.(common arm) and Depth-64.0cm.(normal) , Depth(D2)- 49.0(seat folded). The backseat shall be fixed and chair bottom shall be moveable complete in all respect with required accessories as desired by Engineer- In- Charge.( <b>Make-Penwalker, Godrej, Haworth, Durian, Wipro</b> )
111	Providing and fixing in position wall acoustic panelling made from Rubber Wood Strips of various width and 12 mm thick over already existing GI/Al frame & 50mm thick 1000 GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge on wall and finished with 3 coats of melamine matt polish including sealer coats of approved tint including cost of required cut-outs, with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. ( <b>Make:Acoustika, Armstrong, Anutone</b> )	Providing and fixing of position wall acoustic perforated paneling made from HDF/HDHMR Strips of various width and 15 mm panel thick over already existing GI/Al frame & 50mm thick 1000 GSM Non-woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge on wall complete system has to be achieve NRC .8 level including cost of required cut-outs, with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. ( <b>Panel Make:Acoustika, Armstrong, Anutone, Anakon, Board make:Action Tesa, Centuryply, Greenply</b> )
112	Providing and fixing in position IFR Grade fabric in required color fixed with synthetic grippers over already existing GI/Al frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge & 20mm thick wood wool board including cost of required cut-outs complete in all respect with required accessories as desired by Engineer- In- Charge. <b>MAKE:Anutone, Acoustika, Armstrong</b>	Providing and fixing in position IFR Grade fabric in required color fixed with synthetic grippers over already existing GI/Al frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge & 20mm thick perforated wood wool board including cost of required cut-outs. complete system has to be achieve NRC 1 level. complete in all respect with required accessories as desired by Engineer-In- Charge. <b>MAKE:Anutone, Acoustika, Armstrong, Anakon.</b>
113	Providing and laying of 50mm thick 1000GSM Non woven thermal bonded polyester wadding to be laid in cavity behind wall panelling to be fixed with chicken mesh jali of 24 gauge at all heights complete in all respect to the entire satisfaction of the engineer-in- charge. (Note: The Contractor to submit Manufacturing Test Certificate), required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:Dupont, Armstrong, Acoustika, Anutone</b>	Providing and laying of 50mm thick 1000GSM Non woven thermal bonded polyester wadding to be laid in cavity behind wall panelling to be fixed with chicken mesh jali of 24 gauge at all heights complete in all respect to the entire satisfaction of the engineer-in- charge. (Note: The Contractor to submit Manufacturing Test Certificate), required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. <b>Make:Dupont, Armstrong, Acoustika, Anutone, Anakon.</b>

117	<p>Providing and fixing in position Teak Wooden flooring planks of size 25 mm thick (Finished) of size 100 x 25 mm of minimum 1.00 mt length fixed on 18 mm thick water proof plywood in "Tongue and Groove" fashion as directed. 18 mm thick water proof plywood shall be supported on 50 x 50 mm thick sal wood battens fixed at 600mm c/c both ways with 2 coat of anti-termite chemical. Sal wood frame will be rested on 75 x 75 x 5 mm thick neoprene pads at every joint. Teakwood floor shall be polished with minimum two coat of matt finish Melamine spray polish over a sealer coat with necessary staining and sanding etc.complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make:Greenply ,Duraply,Centuryply)</b></p>	<p>Providing and fixing in position Teak Wooden flooring planks of size 25 mm thick (Finished) of size 100 x 25 mm of minimum 1.00 mt length fixed on 18 mm thick water proof plywood in "Tongue and Groove" fashion as directed. 18 mm thick water proof plywood shall be supported on 50 x 50 mm thick sal wood battens fixed at 600mm c/c both ways with 2 coat of anti-termite chemical. Sal wood frame will be rested on 75 x 75 x 5 mm thick neoprene pads at every joint. Teakwood floor shall be polished with minimum two coat of matt finish Melamine spray polish over a sealer coat with necessary staining and sanding etc. complete in all respect with required accessories as desired by Engineer- In- Charge. Teak wood flooring has to be approved by EIC before supply. <b>(Ply Make:Greenply ,Duraply,Centuryply)</b></p>
120	<p>Fire Rated/Acoustical Wooden Doors: Supply and fixing of 70mm thick 38 db acoustic door having infill of 47mm thick resin bonded glasswool of 24kg/ M3 density coated with FR Acrylic Sealant Sandwiched between two 9 mm thick starpan calcium sillicate boards without asbestos, Brucite and Meerschaum having a density not more than 1150kg/ M3 and thermal conductivity 0.14 W/MxK faced with 6mm thick commercial ply with heat activated intumescent fire seal strip of size 10mm x 4mm mounted in the grooves having hardwood lipping of size 15mm x 70mm and 1mm thick laminate facing on both sides in desired shade and colour. The rate should also include Red Merrandi Frame 145 x 70mm with Commercial Ply Facing (6mm +1mm laminate on both sides)complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(make :greenply,duraply, centuryply )</b></p>	<p>Fire Rated/Acoustical Wooden Doors: Supply and fixing of 70mm thick STC38 db acoustic door having infill of 47mm thick resin bonded glasswool of 24kg/ M3 density coated with FR Acrylic Sealant Sandwiched between two 9 mm thick starpan calcium sillicate boards without asbestos, Brucite and Meerschaum having a density not more than 1150kg/ M3 and thermal conductivity 0.14 W/MxK faced with 6mm thick commercial ply with heat activated intumescent fire seal strip of size 10mm x 4mm mounted in the grooves having hardwood lipping of size 15mm x 70mm and 1mm thick laminate facing on both sides in desired shade and colour. The rate should also include Red Merrandi Frame 145 x 70mm with Commercial Ply Facing (6mm +1mm laminate on both sides)complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Ply make :greenply,duraply, centuryply )</b></p>
126	<p>Providing and fixing of Main Curtain made out of velvet curtain cloth flammability BS EN 1021-1:1994 with upwards rolling arrangement and motorised operation complete with runners, runners, master runner,pullies,steel wire rope required thickness and strength,1 HP motor(<b>make cromton, kirloskar or equivalent as approved by EIC</b>) of required number,air breaker contactors(<b>make L&amp;T,SIEMENS,Schneider</b>)of required number,push button to roll and unroll or stop positions.The curtain should be draped to upwards when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Fabric Make:Raymonds,outive,Response, Nexgen)</b></p>	<p>Providing and fixing of Main Curtain made out of velvet curtain (450 to 500 gram in 1 mtr) cloth flammability BS EN 1021-1:1994 with upwards rolling arrangement and motorized operation complete with runners, runners, master runner,pullies,steel wire rope required thickness and strength,1 HP motor(<b>make cromton, kirloskar or equivalent as approved by EIC</b>) of required number,air breaker contactors(<b>make L&amp;T,SIEMENS,Schneider</b>)of required number,push button to roll and unroll or stop positions.The curtain should be draped to upwards when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Fabric Make:Raymonds,outive,Response, Nexgen)</b></p>

127	Providing and fixing of rear Curtain made out of velvet curtain cloth flammability BS EN 1021-1:1994 with sliding arrangement and motorised operation complete with runners, runners, master runner, pulleys, steel wire rope required thickness and strength, 1 HP motor (make <b>cromton, kirloskar</b> ) of required number, air breaker contactors (make <b>L&amp;T, SIEMENS, Schneider</b> ) of required number, push button to roll and unroll or stop positions with required scaffolding. The curtain should be draped to when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge.. (Fabric Make: Raymond, JC Joel, Response, Nexgen)	Providing and fixing of rear Curtain (350 to 400 gram in 1 mtr) made out of velvet curtain cloth flammability BS EN 1021-1:1994 with sliding arrangement and motorised operation complete with runners, runners, master runner, pulleys, steel wire rope required thickness and strength, 1 HP motor (make <b>cromton, kirloskar</b> ) of required number, air breaker contactors (make <b>L&amp;T, SIEMENS, Schneider</b> ) of required number, push button to roll and unroll or stop positions with required scaffolding. The curtain should be draped to when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Fabric Make: Raymond, JC Joel, Response, Nexgen)</b>
130	Providing and fixing in position Acoustical Panelling made from Wood wool board 20 mm thick over existing GI/AL frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge as per detailed Architectural - Acoustical design & drawings etc. with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Anutone, Fibertex, Duratax )</b>	Providing and fixing in position Acoustical Panelling made from Wood wool board 20 mm thick over existing GI/AL frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge as per detailed Architectural - Acoustical design & drawings etc. with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. <b>(Make: Anutone, Fibertex, Duratax, Anakon)</b>

  
Executive Engineer (Civil & Electrical)

Endst. No: EE/2023/2022-24

Dated: 10/2/2023

A copy of the overleaf is forwarded to the following for information & necessary action: -

1. The DSW-cum-EO, GADVASU, Ludhiana.
2. The Librarian, GADVASU, to upload tender notice on University website for wide circulation.
3. Notice Board of GADVASU, Ludhiana.

  
Executive Engineer (Civil & Electrical)