

**(BILL OF QUANTITY)**

**Name Of Work:- SITC of Audio Vedio works including acoustical work at IUAC Campus, New Delhi-67**

**AUDIO VIDEO SYSTEM**

<b>S. No.</b>	<b>Item Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate (In figures)</b>	<b>Rate(In words)</b>	<b>Amount</b>
<b>AUDITORIUM</b>						
1	SITC of Main FOH Left and Right Line Array Loudspeaker with freq response of 67 Hz to 16kHz or better; Nominal dispersion of 90 degree Horizontal or better ; Total of 40 degree vertical dispersion is required for uniform coverage. All OEMs shall quote appropriate number of boxes as per vertical dispersion of each box being proposed; Cont power: LF : 450 Watt or better ; HF : 80 Watt or better ; sensitivity LF: 93 dB SPL or better , HF: 106 dB SPL or better ; Max SPL : LF: 120 dB SPL or better HF: 128 dB SPL or better ; inbuilt drivers HF: 1 X 2" or 2 X 1" or better LF: Min. 2 X 8" or better complete with standard accessories etc.	2	Nos.			
2	SITC of Mounting / hanging arrangement for above loudspeaker complete with standard accessories etc.	2	Nos.			
3	SITC of main FOH Centre Line Array Loudspeaker with freq response of 67 Hz to 16kHz or better; Nominal dispersion of 110 degree Horizontal or better ; Total of 40 degree vertical dispersion is required for uniform coverage. All OEMs shall quote appropriate number of boxes as per vertical dispersion of each box being proposed; Cont power: LF : 450 Watt or better ; HF : 80 Watt or better ; sensitivity LF: 93 dB SPL or better , HF: 100 dB SPL or better ; Max SPL : LF: 120 dB SPL or better HF: 128 dB SPL or better ; inbuilt drivers : HF: 1 X 2" or 2 X 1" or better ; LF: Min. 2 X 8" or better complete with standard accessories etc.	1	Nos.			
4	SITC of Mounting / hanging arrangement for above loudspeaker complete with standard accessories etc.	1	Nos.			
5	SITC of Subwoofer with frequency response of 40 Hz to 120 Hz or better; Nominal Coverage Pattern : Omnidirectional Power handling of 800 Watt or better; Sensitivity: 97 Db SPL or better; Max SPL: 127 dB or better ; Driver Size : Min 2 X 15" or better complete with standard accessories etc.	2	No.'s			

6	SITC of front fill loudspeaker with frequency response: 100 Hz to 16 kHz; Frequency Range (+ / -10dB) : Nominal Coverage Pattern : 100 degree Horizontal X 100 degree Vertical or better; Long term power handling: 60 W or better ; Max SPL: 110 db SPL or better; Transducers: HF: 1" or better, LF: 5" or better complete with standard accessories etc.	4	No.'s			
7	SITC of stage monitor with frequency response: 70Hz to 16kHz or better; Frequency Range (+ / -10dB) : 65Hz to 18kHz or better ; Nominal dispersion : 75 H X 40 V or better; Long term power handling: 200W or better; Sensitivity: 90 db SPL or better; Max SPL: 113 db SPL or better; Transducers : HF: 1 x 1.4" or better ; LF: min 4 X 2" or 1 X 8" or better complete with standard accessories etc.	4	No.'s			
8	SITC of Left and Right Surround loudspeaker with frequency response: 90Hz to 16kHz or better ; Nominal dispersion: 75 H X 60 V or better; Long term power handling: 200 W or better ; Max SPL: 114 db SPL or better; Transducers: LF: Min. 1 x 8" or better ; HF: min 1.4" or better complete with standard accessories etc.	8	No's			
9	SITC of Left and Right Rear Surround loudspeaker with frequency response: 80Hz to 16kHz or better ; Frequency Range (-10dB) : 70 Hz to 16kHz or better : Nominal dispersion: 75 H X 50 V or better ; Long term power handling: 300 W or better; Sensitivity: 94 db SPL or better; Max SPL: 120 db SPL or better; Transducers: LF: 2 X 8" or 1 X 12" or better ; HF: 1 X 1" or better complete with standard accessories etc.	4	No's			
10	SITC of Control room & Green Room loudspeaker with frequency response: 130Hz to 19kHz or better; Nominal Coverage Pattern : 100 degree Horizontal x 100 degree Vertical or better; power handling: 16W or better; Sensitivity: 84 dB or better; Max SPL: 96 dB SPL or better; Transducer: 2" or better etc.	4	No's			
11	SITC of Digital Signal Processor with Inputs : Min 12 ; Outputs : Min 4 or better ; A/D and D/A Converter : 24 bit or better ; Communication Port : RS 232 ; GPIO Ports ; Dante/Cobranet ; Sampling Rate : 48kHz or better ; Signal to Noise Ratio : 80 dB or better ; THD : <0.04% or better; Dyanmic Range : > 107 Db or better ; Controlling & Networking Port : Ethernet or equivalent ; Inbuilt DSP : Compressor, Limiter, EQ'S, Crossover,Delays, Routers, Matrix mixres, Duckers etc complete with stanadard accessories etc.	1	No's			
12	SITC of Master Controller with Power Supply : Programmable network controller ; Provides gain settings or scene/presets selections ; 2-line-by-40 character backlit LCD ; Volume Controll and Source Slection complete with stanadard accessories etc.	1	No's			

13	SITC of Digital Class D or equivalent; Min 4/8 channel or better Amplifier with 500W @ 4Ohm or better ; 250W @ 8Ohm or better ; min 500W (bridged 2 channel) or better; THD < 0.4%; damping factor > 1000 or better; Voltage gain 32 dB or better; inbuilt programmable and monitorable DSP like compressor, limiter, gates etc with complete equilisations alongwith Audio Expansion Cards for Amplifier for interconnection with DSP complete with standard accessories etc.	4	No.'s			
14	SITC of Digital Class D/H or equivalent; 2 channel 2 X 50W @ 4 Ohm or better 2 X 25W @ 8 Ohm or better; THD < 0.3% or better ; 50 Hz to 15 kHz or better etc.	1	No.'s			
15	SITC of 7.1 AV Receiver with 6 HDMI Inputs & 1 HDMI Outputs or better ; Audio Pre Amp Out : 7.2 or better ; RS-232C , ethernet & USB Port ; Supports WMA, MP3, WAV, MPEG-4 AAC, FLAC, JPEG files ; Dolby TrueHD, dts-HD Master Audio ; Dolby Pro Logic Iiz & Audyssey complete with standard accessories etc.	1	No.'s			
16	SITC of 32 Channel Mixing console with minimum 32 mic inputs and 2 stereo inputs or better; 4 or better EQ bands; Min 6 AUX Sends; Effects & Phantom Power complete with standard accessories etc.	1	No.'s			
17	SITC of handheld microphone with Dynamic type transducer; polar pattern: Cardioid / hypercardioid / supercardioid; frequency response: 55Hz to 15kHz or better; Sensitivity: 1.85mV or better with Switch complete with standard accessories etc.	6	No.'s			
18	SITC of wireless handheld microphone with polar pattern: cardioid / hypercardioid / supercardioid; RF Frequency range: 548 MHz to 865 MHz or better; audio bandwidth: 80 Hz to 16kHz or better; THD: <0.5% or better; S/N Ratio: >103 dB or better complete with standard accessories etc.	6	No.'s			
19	SITC of wireless lapel microphone with 12 or better Pre programmed Selectable Frequencies per Band; Cardioid / supercardioid / hypercardioid polar pattern; RF Frequency range: 548 MHz to 865 MHz or better; THD: <0.5% or better; RF Power: 10mW or better; S/N Ratio: >103 dB or better complete with standard accessories etc.	6	No.'s			
20	SITC of antena splitter system complete with canble & antena for the wireless microphones with complete with standard accessories etc.	3	no			
21	SITC of gooseneck microphone with polar pattern: Cardioid / hypercardioid / supercardioid; Gooseneck length: 15" or better; S/N Ratio: 65 dB or better; Max SPL: 107 dB or better; Frequency Rspnse: 50 Hz to 17kHz or better with Shock Mount complete with standard accessories etc.	1	No.'s			
22	SITC of 19" professional CD/MP3/USB Player with Audio CD, CD-R & MP3 CD compatible; Balanced XLR outputs complete with standard accessories etc.	1	No.'s			
23	SITC of 4 point XLR mic junction box.	2	Nos.			

24	SITC of UL Listed Connectors complete with standard accessories etc.	1	Lot			
25	SITC of Small / Big Size Light weight tripod alluminium Microphone stand with Long Arm, boom type & chrome plating complete with standard accessories etc.	6	Nos.			
26	Supply and Laying of 2 core 2.5 sq mm PVC insulated Cu conduction Armoured loudspeaker cable. complete with standard accessories etc.	700	Mtrs			
27	Supply and fixing of 32 pair snake microphone cable etc.	150	Mtrs			
28	Supply & installation of Maintenance free chemical earthing for LVC required for Audio System & Stage Lighting System, 25kgs of Ground Enhancing chemical such as terec + (Duval-Messien) Complete with Copper Strip etc. as per site requirement.	2	Set			
29	SITC of 3-chip DLP Multimedia Projection system having, 12000 ANSI Lumens or better, 1920 x 1200 WUXGA Native Resolution, 2000:1 Contrast Ratio or better, Inputs: DisplayPorts & DVI, Controls: RS232 In/Out, RS422 In, Ethernet, USB port alongwith Zoom Lens as per specifications etc.	1	Each			
30	SITC Projector mountin bracket etc.	1	Each			
31	SITC of Motorised-electrically operated tab tensioned projection screen of 108" x 192" [220" Diagonal] size, flame retardant and mildew vinyl with black masking borders. Each side of fabric to have a tab guide cable system to maintain even lateral tension and hold surface flat. Bottom of fabric to be inserted into a custom aluminum slot bar with added weight to provide vertical tension on the screen surface etc.	1	Each			
32	SITC of LCD / DLP Projector having 7000 lumens with single/Dual lamp, contrast ratio 2500:1 oe better, 1920x1080 native resolution or better, Inputs: 5 x BNC, RGB D-Sub 15pin, DVI-D, HDMI, Control: RS-232C, RJ-45 LAN alongwith Short Throw Lens etc.	1	Each			
33	SITC Suitable motorized lift for the above projector as per site requirement.	1	Each			
34	SITC of 1/2.8 Exmor CMOS P/T/Z Color Video Camera, effective pixels approx. 2.1 Megapixels, 12x Optical / 12x Digital Zoom Lens, 1080i, 720p, HD Video, Pan Angle/Speed Angle: +/- 100 degrees Speed: 300 degrees /sec. & Tilt Angle/Speed Angle: +25 degrees / -25 degrees, Speed: 126 degrees/sec, Minimum Illumination 1.8 lx (50 IRE, F1.8, 30 fps), S/N Ratio 50 dB, Video Output: HDMI, VISCA Control (RS-232C/RS-422) etc.	2	Nos.			

35	SITC of 3-axis joystick controller, Easy daisy-chain hookup, up to seven VISCA cameras, Auto-focus, white balance, the auto-exposure, feature and backlight compensation control, Preset feature saving up to 16 combinations of camera settings, Automatic camera addressing, VISCA RS232C and VISCA RS-422, Camera on/off control, Contact closure GPI for switcher control etc.	1	Nos.			
36	SITC of 46-inch LED Preview Monitor in Control Room, Type 60 Hz LED BLU, Resolution 1920 x 1080 (16:9), Pixel Pitch(mm) 0.17675 mm (H) x 0.53025 (V), Active Display Area 1018.08 mm (H) x 572.67 mm (V), Brightness 350nit, Contrast Ratio 5,000:1, Built in Speaker (10 W + 10 W), Inputs: Analog D-SUB, DVI-D, HDMI, Component (CVBS Common), RS-232C remote control etc.	1	Nos.			
37	SITC of Desktop Visualizer with Full HD Resolution, 16x zoom, Output Resolution XGA, SXGA, WXGA, 1080p, 30fps frame rate, Dual LED side lamps supported by a gooseneck, Inputs : VGA, HDMI, Outputs : VGA x 2, HDMI, C-Video, One-touch records image and sound synchronously etc complete as required.	1	No.			
38	SITC of All in one cabinet style Podium with 17" or better 17-inch Interactive Monitor or better, Resolution 1280 x 1024 or better, Contrast Ratio 800:1 or better, Brightness 250cd/m2 or better, Response time 5ms or better, Touch Technology: Electromagnetism, 2000Lpi or better, Accuracy +0.5mm or better, Reading Height 6mm or better, operating system: Windows, Mac etc. make: Accusee / USync / Wacom), Gooseneck Microphone (Shure / Sennheizer / Beyerdynamic), Reading Light, High-end computer built-in latest technology i5 (Dell / Lenovo / HP) with Wall Plate having HDMI, VGA, Video & Audio Connectivity ports (Extron / Kramer / AMX) etc.	1	Set			
39	SITC of 4 Input Multifomat Transmitter Over single CATx cable with Inputs : 1 HDMI, 1 DVI, 1 DisplayPort, 1 VGA , 1 unbalnced stereo Audio, Outputs : 1 RJ-45 connector, 1 unbalanced stereo Audio, Max. data rate 6.75Gbps, HDCP Compliant, HDTV Compatible, Resolution Upto 1080p etc complete as required.	4	Nos.			
40	SITC of HDMI Receiver over single CATx Cable with Inputs 1 HDBaseT twisted pair RJ-45 connector, 1 HDMI Output, 10.2Gbps Max datarate, 2K and 4K support, HDTV Compatible, HDCP Compliant, IR Control, RS-232 etc complete as required.	3	Nos.			

41	SITC of Digital Modular Matrix Switcher for DVI & HDMI expandable upto 16 x 16 outputs, should be supplied with power supply, control module, and test module that can monitor and test any input and output in the matrix alongwith 4 Nos HDBase-T digital twisted Receiver inputs, 6 Nos HDMI Inputs & 4 Nos. HDBase-T digital twisted pair transmitter output & 6 Nos HDMI outputs complete with Audio Deeembedder etc.	1	No.			
42	SITC of Touch Panel Control System should be equipped with At least two bidirectional RS-232 serial ports, At least one bidirectional RS-232/RS-422/RS-485 serial port, At least two IR/Serial ports for one-way control of external devices, At least four Digital I/O ports, At least four relays for controlling room functions, At least Ethernet monitoring and control, BMS Compatible Protocol like BACnet, KNX and DALI, Support for minimum 30 Devices with Ethernet Control, Rack mounting (1U) capabilities alongwith Apple iPad with Software etc.	1	No.			
43	SITC of Long range up to 300 feets Ceiling mmount WiFi Router with POE etc.	1	No.			
44	SITC of Wireless presenter unit for participant to share presentation from laptop/smart phone wirelessly, capable to show up to four screens on the main display, users can view, edit and comment on documents in real time, share files and chat with individuals or multiple participants simultaneously, Share smooth full motion video (up to 1080p/60), MP3 files, and photos, INPUTS: 4 USB 3.0, 1 LAN on an RJ-45 connector, GRAPHIC OUTPUTS: 1 HDMI, 1 mini DisplayPort, AUDIO OUTPUT: 1 S/PDIF, PROCESSOR: 4th generation Intel® Dual core 1.4GHz, MAIN MEMORY: 4GB, high speed, STORAGE: 32GB, solid-state drive, LAN: Gigabit LAN, AUDIO: Analog or embedded HDMI, S/PDIF Realtek ALC269 etc.	1	No.			
45	SITC of DVD Recorder, 1080p and Viera Link with HDMI, Pause Live TV with Viera Link, 250 GB Hard disk Space, Jukebox - Enjoy Your Favorite Music with CD Title Information etc.	1	No.			
46	SITC of Streaming Server, Approx. 80gb Storage Capacity, Process two high resolution AV sources from up to five available input signals, Stream and record simultaneously, High quality scaling with flexible two-window management, Produces MP4 media files that are compatible with virtually any media player, Dual Recording and Streaming with LinkLicense, Flexible I/O ports for advanced AV system management alongwith PC & Wowza Streaming Software etc.	1	No.			
47	Supply and Laying of 1.8Metres HDMI patch cord in existing conduit.	14	Nos.			

48	SITC of 19" equipment rack (32U) 600 x 800 mm with front lockable glass door, rear perforated steel door, heavy duty side panels with openable latches, 4 fans, Power distribution unit (6 socket 5 Amp), 2 tray, caster wheel, earthing kit, cable manager etc packet to house all the control equipments .	2	No.'s			
49	SITC of 19" equipment rack (32U) 600 x 800 mm with front lockable glass door, rear perforated steel door, heavy duty side panels with openable latches, 4 fans, Power distribution unit (6 socket 5 Amp), 2 tray, caster wheel, earthing kit, cable manager etc packet to house all the control equipments .	2	No.'s			
50	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.					
50.1	150 mm width X 50 mm depth X 1.6 mm thickness	150	Mtr.			
50.2	300 mm width X 50 mm depth X 1.6 mm thickness	250	Mtr.			
51	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.					
51.1	150 mm width X 50 mm depth X 1.6 mm thickness	20	Each			
51.2	300 mm width X 50 mm depth X 1.6 mm thickness	30	Each			
<b>TOTAL</b>						
<b>SEMINAR HALL</b>						
1	SITC of LCD / DLP Projector having 5000 Lumens brightness with HDBaseT Connectivity Technology, UHP 250W Lamp with 4000 hrs or better Lamp Life, contrast ratio 2500:1 or better, WUXGA 1920x1200 native resolution 16:10, Inputs: VGA with Audio, HDMI, S-Video, Composite Video & HDBaseT RJ45 Play & Outputs: VGA with Audio, Control RS-232C, LAN RJ-45 etc.	1	Each			
2	SITC Projector mountin bracket etc.	1	Each			
3	SITC of Motorized Projection Screen size 69" x 110" (130" Diagonal), Matte White, 16:10 Wide Format with IR remote control etc.	1	Each			

4	SITC of All in one cabinet style Podium with 17" or better 17-inch Interactive Monitor or better, Resolution 1280 x 1024 or better, Contrast Ratio 800:1 or better, Brightness 250cd/m2 or better, Response time 5ms or better, Touch Technology: Electromagnetism, 2000Lpi or better, Accuracy +0.5mm or better, Reading Height 6mm or better, operating system: Windows, Mac etc. make: Accusee / USync / Wacom), Gooseneck Microphone (Shure / Sennheizer / Beyerdynamic), Reading Light, High-end computer built-in latest technology i5 (Dell / Lenovo / HP) with Wall Plate having HDMI, VGA, Video & Audio Connectivity ports (Extron / Kramer / AMX) etc.	1	Set			
5	SITC of 7-Input Analog & HDMI ProScale Presentation Digital Scaler/Switcher with Ethernet Control, INPUT: 2 HDMI connectors (HDMI, HDCP version 1.1); 1 VGA on a 15-pin HD (F) connector; 1 composite video on an RCA connector; 1 Y/C on a 4-pin connector; 2 component video each on 3 RCA connectors; 7 unbalanced stereo audio each on 3-pin terminal block connectors & OUTPUT: 1 RGBHV on 5 BNC connectors; 1 HDMI connector (HDMI, HDCP version 1.1); 1 VGA (RGBHV) on a 15-pin HD connector; 1 S/PDIF and 1 unbalanced stereo audio on 2 RCA connectors, H FREQUENCY: 15.63-90kHz, V FREQUENCY: 50-100kHz etc.	1	No.			
6	SITC of HDMI Receiver over single CATx Cable with Inputs 1 HDBaseT twisted pair RJ-45 connector, 1 HDMI Output, 10.2Gbps Max datarate, 2K and 4K support, HDTV Compatible, HDCP Compliant, IR Control, RS-232 etc complete as required.	1	Nos.			
7	SITC of Touch Panel Control System should be equipped with At least two bidirectional RS-232 serial ports, At least one bidirectional RS-232/RS-422/RS-485 serial port, At least two IR/Serial ports for one-way control of external devices, At least four Digital I/O ports, At least four relays for controlling room functions, At least Ethernet monitoring and control, BMS Compatible Protocol like BACnet, KNX and DALI, Support for minimum 30 Devices with Ethernet Control, Rack mounting (1U) capabilities alongwith Apple iPad with Software etc.	1	No.			
8	SITC of Main FOH loudspeaker with frequency response: 80 Hz to 18kHz or better ; Nominal dispersion: 100 H x 75 V or better ; Long term power handling: 60 W or better; Sensitivity: 85 db SPL or better; Max SPL: 105 db SPL or better; Transducers: LF: Min 1 X 5" or better ; HF: Min 1" or better complete with standard accessories etc.	2	Nos.			



9	SITC of Mixer Amplifier with Input : 4 or better ; Output: 1 or better ; Cont. Power Per Channel : Min . 120 per channel W or better ; Power @ 70/100V : Min 100W per channel or better ; THD <0.5% or better ; Frequency Range : 50Hz to 15kHz or better complete with equilisations etc.	1	No.'s			
10	SITC of wireless handheld microphone with polar pattern: cardioid / hypercardioid / supercardioid; RF Frequency range: 548 MHz to 865 MHz or better; audio bandwidth: 80 Hz to 16kHz or better; THD: <0.5% or better; S/N Ratio: >103 dB or better complete with standard accessories etc.	1	No.'s			
11	SITC of wireless lapel microphone with 12 or better Pre programmed Selectable Frequencies per Band; Cardioid / supercardioid / hypercardioid polar pattern; RF Frequency range: 548 MHz to 865 MHz or better; THD: <0.5% or better; RF Power: 10mW or better; S/N Ratio: >103 dB or better complete with standard accessories etc.	1	No.'s			
12	Supply and Laying of 2 core 2.5 sq mm PVC insulated Cu conduction loudspeaker cable. complete with standard accessories etc.	200	Mtrs			
13	Supply and Laying of 2 core PVC insulated Cu conduction sheilded microphone cable etc..	100	Mtrs			
14	Supply and Laying of 1.8Metres HDMI patch cord in existing conduit.	4	Nos.			
15	SITC of 12U Equipment Rack for housing all rack mountable equipments with internal wiring, front glass door; heat dessipation fans; movement wheels, power distribution units etc complete with standard accessories etc.	1	No.'s			
<b>TOTAL</b>						
<b>LOBBY AREA</b>						
1	SITC of 75-inch LED Display, Type 120Hz LED BLU, Resolution 4K UHD Display (16:9), Pixel Pitch(mm) 0.2865mm (H) × 0.8595mm (V), Active Display Area 1650.24mm (H) × 928.26mm (V), Brightness 320 nit, Contrast Ratio 4000:1, nputs: Inputs: Analog D-SUB, DVI-D, HDMI, Component (CVBS Common), RS-232C remote control alongwith Wall / Ceiling Mounting Bracket etc.	2	Nos.			
2	SITC of Ceiling loudspeaker with Frequency range : 100 Hz to 17 kHz or better ; nominal dispersion: 140 degree or better ; power handling: 16W or better; Sensitivity: 84 dB or better; Max SPL: 96 dB SPL or better; Transducer: 2" or better to be installed as four separate zones (as per engineer-in-charge) complete with standard accessories etc.	30	Nos.			

3	SITC of Digital Class D or equivalent; 4 channel Amplifier 250W @ 4 Ohm or better 250 W @ 8 Ohm or better ; min 500W (bridged 2 channel) or better; THD < 0.4%; damping factor > 1000 or better; Voltage gain 32 dB or better; inbuilt programmable and monitorable DSP like compressor, limiter, gates etc with complete equilisations etc.	1	Nos.			
4	SITC of mixer with minimum 2 mic + 1 stereo or better ; 2 or better EQ bands; Min 1 AUX Sends; complete with standard accessories etc.	1	Nos.			
5	Supply and Laying of 2 core 1.5 sq mm PVC insulated Cu conduction loudspeaker cable. complete with standard accessories etc.	700	Mtrs.			
6	SITC of UL Listed Connectors complete with standard accessories etc.	1	Lot			
7	SITC of 9U Equipment Rack for housing all rack mountable equipments with internal wiring, front glass door; heat dessipation fans; movement wheels, power distribution units etc.	1	Nos.			
<b>TOTAL</b>						
<b>SUBTOTAL (VIDEO &amp; AUDIO SYSTEM)</b>						
<b>STAGE LIGHTING &amp; STAGE FURNISHING</b>						
1	P/f of the control room window in E track with sliding arrangement with 6mm glass for Control Room Complete with accessories like rollers rubber gaskets etc as reuiqred complete.	1.8	Sqm			
<b>WINGS</b>						
2	Providing and fixing fire retardant CS TRAVERA crepe black fabric glued over 12mm foam over pasted on 6mm commercial ply fixed over the metal framework out of 50x25x16G MS Tube . The rear side to have 12mm Gypsum baord fixed over the frame complete with jointing taping etc. The Side edges to have suitable 1st class steambeech wood moulded beading of size 90x18mm as per the design drawing approved / enclosed. The size of beading may vary as per the requirement. The beading to be given two or more coats of clear melamie polish after surface preparation as per manufacture specification complete. Measurement will be made for external dimensions including beading for payment. As per design drgs. The rear gypsum board to be given two coat of black plastic emulsion paint.	6	Sqm			
3	Providing & fixing of the frills madeout of fire retardant CS traversa Crepe black colour fabric in 1:2 gathers complete with 25mm dia B class GI pipe painted black suitably hung from the suspension grid.	25	Sqm			

	<b>MS Suspension Grid on stage</b>					
4	MS suspension grid providing and fixing MS angle rafters above acting area of stage at 1200x600mm centers, 2 x 40x40x4mm thick. MS angle runners & 25x12x12mm thick studs as MS spacers fixed @ 600mm/c sandwiched between the MS angle runners so as to maintain 12mm gap between MS angle . The grid so formed to be suspended from bottom of roof structure by means of 35 x 5mm thick. MS flat suspenders, fixed with MS cleats & dash fasteners at RCC slab & nuts & bolts at 1200mm centers to the grid. Painting MS suspension grid & suspenders with 2 coats of redoxide primer and 2 or more coats of enamel paint of approved shade.	1500	kg			
5	<b>CYCLORAMA FRAME</b> P/f of the cyclorama for the stage by fixing 35x35x5mm MS angle on the wall With MS angle hold fasts secured to the wall & 40mm dia 14G MS pipe welded to it as per the drgs . Further 40mm dia pipe welded to it at 600 centers vertically at on angle of 45 deg. & finally welding 40 mm dia pipe horizontally to it The pipe to be supported away with at 200mm centers by MS pipe. Further p/f 12mm dia MS hooks welded to the both ( top & bottom). Supported by MS angle hold fasts of 35x35x5mm on the wall at 1200mm centers. Finally fixing PVC cyce cloth as per approved sample & fixing by cotton doori 10mm thk . ( 10M x 7 M)	68	Sqm			
	<b>CURTAIN SYSTEM</b>					
6	<b>Main Curtain</b> made out of fire retardant CS TRAVERA cloth 350gsm with horizontal sliding arrangement complete with fixing rails, brackets, sliding arrangement & motorised operation complete with runners, master runners, pullies, 3mm steel wire rope, 1 HP motor (Crompton) 2nos. air breaker contactors (L&T/SIEMENS), 2nos. micro switches for auto stop, 3 nos push buttons for forward, reverse and stop positions. The curtain should be draped to half area when in closed position. Minimum overlap at centre should be 900mm and should be stitched in double gathering. Appx. Size:- 17000 X 6000.	1	Each			

7	<b>REAR CURTAIN</b> made out of fire retardant CS TRAVERA cloth 300gsm with horizontal sliding arrangement complete with fixing rails, brackets, sliding arrangement and motorised operation complete with runners, master runners, pullies, 3mm steel rope wire, 1HP motor (Crompton) 2 nos, air breaker contactors (L&T/SIEMENS), 2 nos. micro switches for auto stop, 3 nos. push buttons for forward, reverse and stop positions. The curtain should be draped to half area when in closed position. Minimum overlap at centre should be 900mm. The curtain should be stitched in double gathering. Appx. Size:- 14000 X 6000.	1	Each			
8	<b>CYCLORAMA SCREEN</b> :- Providing and fixing cyclorama curtain cum screen in plastic perforated fire rating material. The screen to be fixed on tubular frame made out of 35mm dia MS pipe. Appx. Size:- 10000 X 5000.	1	Set			
9	<b>CLOTH WINGS</b> :- Providing and fixing cloth wings made out of fire retardant CS TRAVERA cloth fixed on 6mm thick commercial plywood fixed on one side of MS 50mm x 25mmx 16G pipe welded frame work. The pipe framework made out of 25mm x 50 mm pipe. c/c 900 x 900 fixed with overhead pivote track complete with duly painted on both framework. (size: 1500 X 6000)	4	Set			
10	<b>FRILLS:</b> Providing and fixing average frills made out of double gathering glazed cotton cloth to be installed above the stage with 28mm dia GI pipe. Average Size: 17000 X 2000	4	Set			
11	Providing and Fixing of 50mm dia B class GI pipe to be hung from existing grid or roof structure for side wings, lighting bars.	80	Mtrs			
12	GI Pipe Grid over the stage for supporting stage equipment in position 50mm dia GI pipe grid with welded connection, suspended from ceiling structure/ slab by MS flat suspenders with expansion fasteners, centre to centre distance (1 Mtr - 1.2 Mtr), fixed to wall/beam support with MS plate with expansion fasteners etc. painted black with 2 coats of paint and coat of primer.	178	Sqm			
<b>STAGE LIGHTING SYSTEM</b>						
13	1000W Halogen Planoconvex spot light CE Certified, complete with 1000 W Halogen Bipin T-11 lamp, spherical anodised reflector, imported socket, 150mm dia planoconvex lens, bottom sliding knob, yoke, colour frame etc.	12	Each			
14	White LED Profile Light (3000°K), having Lumensity of 12,000 lux at 2mtr with zoom angle of 20° / 36° with electronic full range AC 90-260 V, 50 Hz power supply & maximum 80W complete.	10	Each			

15	White LED Fresnel Light (3000°K) having lumensity of 7200 lux at 2 mtr with electronic full range AC 90-260 V, 50 Hz power supply & maximum 80W complete.	10	Each			
16	1000W, 240 Volt, PAR Sealed Beam Light CE Certified, with CRC Sheet Metal and alluminium die casting, mat black color, yoke & clamp etc.	14	Each			
17	LED PAR Light CE Certified ,with Voltage: 110-240/50-60 Hz, Colour: RGB+White (R-15, G-18, B-18, W-6), Power: AC22V / 50W / 120W / 200W, Channel: 8 DMX512 Channels, Control Mode: Sound Activation / Built-in Program / Master-Slave Control, Strobe, Colour Selection Procedure, Colour Interchanges, 0-100% Linear Dimming, Rich Colours brighter and more colourful.	12	Each			
18	LED Long BAR Light CE Certified, with Electrical: Voltage: AC100~240V... 50/60Hz, Rated Power: 72W, LED: 24* RGB X 3 W, Beam Angle: 40°. Functions: RGBW color mixing / Custom programs / Strobe / white Balance / RGB to White / RGB Calibration / Dimmer Operation : DMX512: 3CHS / 5CHS.	6	Each			
19	Moving Head 575W with Lamp: Philips MSR 575/2, Automatic re-strike of lamp in case of accidental switching off, Lamp on/off via DMX; reset via DMX, Optical group:3 lenses with multi-coated treatment, , Motorized iris Dimmer / shutter / strobo: Linear dimmer, Shutter, Colours:2 colour wheels (linear selection); 8 colours + open each Color change with blackout sync, Gobos:2 gobo wheels:Gobo wheel 1: 7 rotating and 16 bit indexable Gobos (interchangeable), Gobo wheel 2: 11 gobos, (interchangeable), Gobo change with synchronized blackout, Effects:Indexable prism rotating in both directions (3-facet), Frost:2 frost filters, Pan / Tilt locking system, 16-bit resolution, Super Speed function (4 selectable speeds), Automatic Pan/Tilt repositioning in case of knocks, Internal Microcomputer:26 DMX cannels, Connections:2 XLR connectors (In and Out) with 3 and 5 poles selectable by user, with Dome complete etc as required.	4	Each			
20	Light Point Wiring from Patch Panel/ Distribution Board to be provided near stage to various stage light fixtures with 2.5 Sq.mm 3 Core PVC Insulated and PVC Sheathed Cable (ISI Mark) including Cable Tray of suitable size for laying these wires on the tray including 20 amps metallic clad sockets / 15 Amp Socket to direct points with box at top. Make of Wire: Polycab / Unique / Finolex.	88	Points			
21	DMX Wiring Points including looping point etc.	38	Points			

22	DMX Splitter :- Professional lighting equipment uses the DMX protocol and network for communication. The DMX network is reliable way to control all lights from a DMX Controller. If the no. of fixtures to be controlled are more than the single has to be split this is where splitter is use. The System adoptes the state of art technology which ensures maximum safety & DMX signal distribution is perfect. The DMX splitter provides one DMX input & six buffered outputs. The connections are thru 3 pin or 5 pin XLR connectors. Size: 432 x 185 x 45 mm etc.	1	Each			
23	24CHx4KW Electronic Dimmer CE Certified with Dual DMX signals input and can work simultaneously, Fade accuracy: 4096 (16 bit) , Integrative design, light weight, easy for maintenance, Independent dimming, Soft and hard patch for optional, English menu, LCD display, user-friendly interface, Response time: quick, normal or slow, helping prolong lamp's life, 50 backup cues, run both manually and automatically, Status selectable when no DMX signal, 3 working modes for each channel: normal, fix and switch, 5 User-selectable curves: linear, square, s-curve, extraction or user-defined, Very low interference, Over load and Neutral-lost warning system force to limit output, Each dimmer output can be set as range of 110 to 250VAC Technical parameter, Voltage: 160Vac~240 Vac, Frequency: 45Hz~65Hz, Fade accuracy: 4096 (16 bit), Auto voltage compensation: effective with a 10% voltage variation input, output variation 1%, Power Consumption: 60W, Output: 4KW for 24 channel, Signal: DMX-512.	2	Each			
24	Inter connection wiring for Patch Panel to Dimmer and Dimmer to Control Room with required connectors as per drawing.	1	Lot			
25	M.S. Pipe Ladders to be provided on sides of the Stage to be fixed on the existing GI pipe or top grid. Made of 50mm x 25mm MS pipe. [a] Size:- 600 x 2400.	4	Each			
26	24/48 Control Panel with upto 512 control channels, 48 channel faders, 2 preset master faders, fade time controls, sequence speed control, sequence master fader, grand master fader, blackout button, Flash buttons.	1	Each			
27	Supply, Installation, testing & Commisiioning of Clamp for Installation of light fixtures.	68	Set			
28	Supply, Installation, testing & Commisiioning of Clamp for Installation of Safety wire with lock.	68	Set			
<b>SUBTOTAL (STAGE LIGHTING SYSTEM)</b>						
<b>ACOUSTICAL WORK</b>						

1	Providing and fixing of first class Teak Wood Stage top & front edging (moulding) of external size 145x500 mm. The edging shall be cut and prepared as per the stage front circular edge of the approved shape & design complete in all respect as per instructions of Engineer-in-charge.	18	R.MTR			
2	<b>Stage Wooden Flooring:</b> Providing and fixing 75x19 mm first class teakwood plank (900mm long) flooring with tongue and groove joints (concealed screwing and minimum length 1.5m), comprising with double 12mm BWP ply board (Duro/ century / Green), fixed to Salwood frame of 50x50mm at 600mm x 600mm centre to centre support locations including providing and applying a coat of ready mixed primer and a coat of Fire resistant paint both of approved brand and manufacturer over exposed surfaces. The Salwood shall be kiln seasoned and chemically treated, the Salwood frame should be jointed with mathani cut method. Entire work to be done complete as per drawings, specifications and direction of Engineer in Charge including melamine polishing of teak wood planks after filling wood filler and sand papering up to smooth finish in natural colour. The frame work to be filled with 25mm thick thermal bonded Polyester wedding micron fibre 800gm/sqm. All Makes and models of all items/samples should be approved by the consultant prior to the installation. The rate shall include all above activities and material.	164	SQM			
3	<b>Auditorium Skirting:</b> Providing & fixing 150 mm Skirting out of 12 mm thick BWP ply board of reputed make . with 1.5 mm laminate (Duro/ century / Green) of approved shade, to be fixed as per the drawings on framework (or wherever required as per design drawing) centre jointed with each other with GI cleats & drive all screws. The entire work to be executed as per instructions of the Engineer-in-charge. All Makes and models of all items/samples should be approved by the consultant prior to the installation.	81	R.MTR			

4	<p><b>Auditorium and seminar room:</b> Providing and Fixing Channelled Woodworks perforated panels of width 128mm, thickness of 15mm and length 2440 mm or as approved by the Engg-in-charge, made of a high density fibre board with minimum 830 Kg/M3 density substrate with a laminated facing / wood veneer as per the approved shade/species &amp; finish and a melamine balancing layer on the reverse side. The boards shall have a special perforation pattern where the visible surface has a "Helmholtz" fluted perforation of 2mm width and 14mm of visible panel each. The panels shall provide a fire reaction of Class of 1 as per Part 7 of BS 476. The edges of the panels shall be "tongue-and-grooved" to receive special clips for installation. The back of the perforated panel shall have sound absorbing non-woven acoustical fleece having NRC of 0.55. The panels shall be mounted on special aluminium splines using clips provided by approved makes complete in all respect and as approved by the Engineer-in-Charge.</p>					
	<p>INSTALATION: Wooden battens (provided by others) of section 50mmx50mm , to be filled with 25 mm micron,or as approved by the Engg-in-charge on the solid wall horizontally using screws and plugs at spacing of 600mm centre-to-centre. Screw the aluminium extruded keel for channelled woodworks (GTPT001) provided by approved makes over the lowest and second wooden batten at an on-centre distance of 600mm. Install the first set of wooden panels by inserting the clips for border channelled woodworks (GTPT002) and insert the groove of the panel into the projecting flange of the aluminium clip. Continue installing rows of panels by inserting the tongue into the groove of the earlier inserted panel and progressively installing clips for inside channelled woodworks (GTPT003) into the next keel till the actual height is achieved. Use clips for border channelled woodworks (GTPT002) to finish off the installation. Finish off the edges using wooden moulding of matching colour (provided by others).</p>	296.75	SQM			
5	<p><b>Fibre glass acoustic Panelling for Auditorium wall above 1.6 M Ht :</b> Providing and supplying 'Acoustical Wall Paneling' with square edges made of fibre glass substrate 25mm thick and wrapped on the front side with an acoustically transparent and classified for CS TAVERA inheheren fire retardent fabric, with an option of colors as per the choice of the engineer-in-charge of size 600x1200 mm providing a minimum sound absorption level of 0.90 NRC to be affixed to wall using Wall panel impalers supplied by approved makes and construction adhesives as per the instructions laid down by the manufacturer.</p>					



	<p><b>Installation :</b> 4 nos. wall panel Impalers of shall be fixed to the wall surface using self tapping screws. Silica based construction adhesive to be dabbed on to the projecting elements (spikes) of the impalers. Wall panels shall be pierced through the spikes of the impalers ensuring the line and level of the panels are maintained.</p>	392.00	SQM			
6	<p><b>ACOUSTIC DIFFUSION FOR SIDE WALLS:</b> Providing and fixing MLS design Diffusion panels of width 600 mm, length 1200mm and thicknes 38mm, made of Rubber solid wood, density board, finish with original wood texture/ required color, frequency range 500Hz-4000Hz, Environmental performance grade: E1(GB). Installation of MLS Diffusion panels on GI Channels of section 50mm x 50mm on GI pipe frame factored at Sl. No. 10. GI panels fixed horizontally at spacing of 600mm center to centre and screwed aluminum extruded keel for channeled wood works with 50mm thick thermal banded polyester non-woven wadding Mikron fiber of 1000 gm/sqm. The mikron fiber to be held in position with chicken wire mesh. The final color of the material and design horizontal orvertical to be approved by the consultant and the architect both to ensure the final looks of the installation is as per the design intended for , contractor to take a final sign off before start of work . The panels shall be mounted on special aluminum splines using clips. All Makes and models of all items/samples should be approved by the consultant prior to the installation.</p>	4	Nos			
7	<p><b>ACOUSTIC FIRE DOOR FRAME &amp; SHUTTERS</b></p>					
7.1	<p>Providing and fixing of Wooden fire cum accoustic doors with framme as per BS:476 Part-20 &amp; 22 &amp; IS 3614 part-1 &amp; part-2 for stability, integrity and thermal insulation having 120 minutes fire rating.Criteria for Wooden door confirming to IS:277 with the following specification.</p>					
	<p>Door leaf shall be 77mm thick fully flush door.</p>					

<p>77mm thick shutter, comprising of 100mm x 65mm hardwood internal timber frame work, with infill of 41mm thick fire resistant &amp; accoustic wool insulation of 48 Kg/m3 density coated with VIPER FR coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick HILUX / PAMTECH Non Combustible (Calcium Silicate) Board on both sides (edge to edge on internal Hard wood frame and cladded with 6mm thick Commercial ply &amp; 1mm thick laminate (Any Regular Shade) on both faces with 77mm x15mm exposed teak wood beading &amp; 01 no. x 20 x4mm fire &amp; smoke intumescent seal shall be used for shutter &amp; for the frame 02 Nos. X 10 x 4mm fire and smoke intumescent seal (For Smoke Sealing). The Frame shall be 145 x90mm of Teak Wood (Ivory Coast) and coated with VIPER Fire reatrdent Primer. The rebate shall be of 20mm x 80mm in Door Frame to accommodate the shutter in frame The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack and shall be Off –white in colour with a smooth surface suitable to receive most forms of decoration. It should include door closer ,coordinator,panic Bar ,wall bearibg hinges (SS ) &amp; Door handels as per architect both for single &amp; double door . ( Approved Make : Dorma /Fliker /Hafele ) ,Automatic drop down seals and premier seals : approved makes CCEItaly , Lorient ) , Plywood / Venner / Laminates sheds to be approved by EIC . ( Approved makes Green ply /Centurry/Duro )</p>					
---	--	--	--	--	--

	Note: Rate per door are inclusive of the following: 1. Single rebated Teak Wood (Ivory Coast) frame of section 145x90mm finished with primer. 2. 77mm thick wooden shutter faced with 6mm thick commercial ply & 1mm Thick Laminate (Any Regular Shade) on both face. 3. Accoustic Seal Set Of RAVEN Make. Delta Perimeter Seal RP-120 & RP-10 Automatic Door Bottom Seal RP:8Si					
a)	Double leaf doors	35.28	Sqm			
b)	single leaf doors	6.3	Sqm			
7.2	Providing and fixing SS ball bearing hinges of 100x89x3 mm SUS 304 grade complete with ss screws complete as per the satisfaction of Engg-in-charge.	72	Each			
7.3	Providing and fixing panic trim for operation from entry side of the fire door complete as per the satisfaction of Engineer-in-charge.	20	Each			
7.4	Providing and fixing heavy duty door closer complete as per the satisfaction of Engg.-in-charge.	18	Each			
	<b>SUBTOTAL (ACOUSTICAL WORK)</b>					
	<b>GRAND TOTAL (AUDITORIUM, SEMINAR HALL &amp; LOBBY AREA)</b>					