MODULAR OT BILL OF QUANTITIES AYURSUNDRA HOSPITAL AT GUWAHATI

S N	COMPLETE DESCRIPTION OF ITEM.	QTY	UNIT	RATE (RS)	AMOUNT (RS)
1	Supply and Installation of Stainless Steel Walls & Ceilings for Operation Theatre using 1.60mm thick SS 304 grade steel sheet of Jindal/Tata/SAIL /Bhushan make complete. The pre-fabricated modular construction should be designed and constructed for exact size of Stainless steel sheet (1.6 mm thick) walls & ceiling panels backed by 12mm thick gypsum board to provide the seamless operating room. The inner surface walls should be fixed to the brick wall with the adequate support system by keeping minimum possible cavity/gap in between the solid and steel walls. The gap between the inside and outside surfaces of the operating room shall be variable to suit the architects' layout, but shall be sufficient for the flush mounting of equipments. The individual wall panels shall be spot welded together at equal intervals to render equal support to the panels. Spot welding should be properly grinded to make the surface levelled with no kinks and protrusions. All wall-mounted equipment shall be flush mounted and sealed into the theatre wall. The wall panel design and construction should allow for the installation and support of all equipment and the provision of openings required for the installations, without affecting rigidity and strength. Access boxes shall be fitted to the rear of all wall-mounted equipment to enable maintenance to be carried out from outside the operating room. All the sharp edges and corners shall be duly smoothened.	900	Sqm		
2	Supply and Installation of Imported Antibacterial OT Paint such as Liquid Plastic by Sikka /SSK /Viessmann on Stainless Steel Walls & Ceilings for complete Anti-Microbial Protection. The hygiene coatings start the biocidal action as soon as the microorganism lands on the surface, and prevent the growth of mould, bacteria and yeasts. The speed with which they can be installed and the ease of subsequent maintenance also create significant cost savings. Chemical Persistence: The hygiene coating should be suitably resistant to abrasives, detergents and weak acids and alkalis used in cleaning regimes and can be regularly steam cleaned without loss of performance or adhesion.	900	Sqm		

3	Supply and Installation of Antistatic Conductive 2 mm thick Tile Flooring of make Tarkett/ Gerflor/ Armstrong. The flooring shall be installed on a smooth, clean sub floor which should be free from any undulation. A copper strip/mesh should be layered under the tiles, with one earthing point for every 150 sft of area and good quality water based adhesive for fixing as per as manufacturers recommendation. The joints must be welded by heat fusion process to get a seamless floor by using a PVC welding bar of matching colour to be supplied by the manufacturer, using a hot air gun. Flooring shall be seamless with perfectly curved flash-coving, resistance to mechanical stress and dynamic loads and having ESD /EMI(conductive) protection characteristics, washable, scratch resistant, fire resistant, chemical resistant, slip resistant, anti fungi & bacterial growth, dimensional stable and electrical resistant, including fixing of tiles with 3mm average thick levelling compound of make ARDX / Viesmann underneath the tile flooring . The hyper- fluid self-levelling product shall have prolonged workability, extra rapid hardening, compensated shrinkage, suitable for high- resistant adjustment from 2to 4mm of irregular non planer substrates before laying homogenous tiles with very low TVOC emission and hypo-allergenic cements. A cement based adhesive with SAS technology, reactive-epoxide and polyurethane two component products, dispersed in water solution and solvent shall be used.	420	Sqm		
4	Supply and Installation of Automatic and Manual foot operated Hermetically Sealed Sliding Door size 1500mm x 2100mm with vision panels, 300mm X 300 mm (Complete) make such as metaflex/ Portlap/ KosI or equivalent make. It shall maintain sterility and the correct air pressure in the room. The doors shall be designed to be sliding, hermetically sealed and guided on Track made of patented anodized aluminium profile, size 90 x 110 mm with exchangeable rubber gasket. The door blade shall be 60 mm. thick flush finished with hygienic hard plastic 6 mm thick laminate. The door shall be made up of Anodized aluminium surrounding, 4-sided, blind fixed made of CFC-free Polyurethane or EPS 48 mm thick. The Frame shall be sliding type, standard delivered with an anodized aluminium angle profile 3-sided and blind fixed to a finished wall opening. The door blade gasket shall seal the opening to this aluminium profile. The Lock shall be electro mechanical type mounted on the track with a key-switch on the finished wall on both sides with Euro norm cylinder and 2 keys. It should have 2 sensors with foot operated (magic switch).	8	nos		
	It should have a Microprocessor-controlled and regulated electromechanical sliding door drive. The door shall have manual override.				

5	Supply and Installation of Unidirectional Low Turbulence Laminar Air Flow Plenum Ceiling Planair System with miniplate H13/H14 Filters Complete. The Plenum unit shall have factory prepared fine sealing system with integration of ceiling mounted equipment and OT Ceiling, It shall be flexible with modular range of solutions, adjustable to the local requirements, It shall be made out of high quality and durable materials, filter housings and pressure chamber shall be made out of Aluminium. It should have a low pressure drop which allows for the long-term usage of the HEPA miniplate H13/H14 filters. It should have reliable filter efficiency which is guaranteed to remove particles and germs with the usual H13/H14 filters retaining 99.99% of particles and germs. It should have minimal pressure drop to ensure the energy saving characteristic of the Laminar Flow Ceiling. It shall also be integrated with a diffused shadow less lighting system with a control on the intensity of luminance by using high frequency electronic fluorescent tubes and ballasts.	8	nos		
6	Supply and Installation of Pressure Release Damper /Cascade pressure stabilizer having multi 304 grade stainless steel blades to control room air pressure. All operation rooms should be supplied with multi bladed damper specifically designed to control room air pressures and protection, the Doors should be provided within the modular panel. The pressure dampers will contain grade 304 SS Blades which pivot upon sealed for life bearing assemblies.	8	nos		
7	Supply and Installation of Stainless Steel Storage Unit 1700mmx1000mmx500mm manufactured from 1.6mm of SS 304 grade steel sheet of Jindal/ Tata/SAIL/Bhushan make complete. The cabinet should house Vacuum insulated fixed glazing made up of double 5 mm thick toughened glass such as Modi with overall thickness of 50mm, these doors should be installed on the storage units with the help of fittings allowing an opening allowance of at least 160degree. The storage unit should be divided in 4 equal parts and each part should have individual doors with locks of make such as Godrej in the system. It should have detachable type steel racks duly fitted with UV lights to provide	24	nos		
8	Supply and Installation of Hatch Box size 600mm x 600mm for dirty Linen complete. Stainless Steel sheet made out of Stainless (304 Grade) doors with view glass. It includes provision of heavy duty electromagnetic interlocking arrangement. It also includes Electric buzzer, UV Light (8Watt) 1 No & UV lighting arrangement.	2	nos		

9	Supply and Installation of OT Surgeon control panel of 6 Tile complete. Control panel shall necessarily incorporate, electrically operated equipment, ground & Power bar unit with power bar connection and medical gas to be recessed with matt aluminium finish. The interior part of the panel can be exceed two ways, Front part shall be inside the OT and Rear Part shall be Outside the OT. The approach from inside the room shall be through main door and for the outside panel through dirty corridor. The panel shall include the following Pressure switches for Surgeon Control Panel. Analog Clock Electric Alarm Repeater Humidity &Temperature Display General Lighting Control Ground Connection Hand Free Telephone 2 Nos. RJ-45 2 Nos-5 Nos Electrical switch & Socket Audio & Video Socket. 2 No. Earthing Outlet 1 No gas alarm Upto (5/6 Gases) The Size of the Panel shall be 1000 X 1500 X 200 mm	8	nos		
10	Supply and Installation of X Ray view box duly flushed with OT wall with LED lights.. The system will satisfy electrical safety codes for high & low voltage system. It shall be equipped with a 3-plate X-Ray viewing screen. It shall also be designed to provide flicker free luminance for the film viewing purpose. It will be installed flushed with the theatre wall for hygienic and ease of cleaning purpose. The X-Ray viewing screen will be designed for the purpose of front access. The X-Ray viewing screen will be illuminated by 4 pieces of high frequency LED lamps and the dimming is controlled by the usage of dimming ballast with the PCB that is mounted inside the box. The diffuser will be able to diffuse the light evenly and to provide enough luminance for film viewing. It shall be made of high quality opaque acrylic sheet. The film should be held firmly by using spring-loaded clips for ease of mounting and demounting. The body shall be built by using electrolysed steel duly powder coated.	8	nos		
11	Supply and Installation of List Board/Writing Board Size: 1000mmx 700mmx 60mm. The writing unit should comprise of flush mounted white laminate board, which can be opened to create a wall mounted writing surface within the operating room. The white board should be constructed from white laminate board.	8	nos		
12	Supply and installation of Vacuum Insulated View Window with Motorized Blind of specified size consisting of Vacuum insulated fixed glazing made up of double 5 mm thick toughened glass. It also include powder coated aluminium frame of approved shade flush mounted with wall panelling. It also includes motorized horizontal venetian blinds made up with powder coated aluminium strips of Vista level or equivalent of approved shade capable of 90 degree rotation and will be sandwiched in gap between two toughened glasses with overall thickness of 50mm. The motor should also be capable of being operated with remote and shall be of reputed brand as approved by Engineer –in –charge.	8	nos		

13	Supply and Installation of (automatic and manual foot operated) Stainless Steel Two bay Surgical Scrub Sink complete. Scrub stations for each operation theatre shall be designed to ensure that surgeons and staff can undergo a thorough aseptic scrub, whether using the count stroke or timed scrub methods. Stainless Steel Scrub Sink shall be fabricated from 1.6mm of SS 304 grade steel sheet of Jindal/ Tata/ SAIL/Bhushan make complete and seamless welded and polished to a satin finish. Hands free operation shall include infrared sensor with a built-in range of adjustment. User definable settings of 3, 6, 12, 30 and 45 seconds, 1, 3, 5 and 10 minute are available. A thermostatically controlled mixing valve shall be provided to automatically maintain water temperature.	4	nos		
14	Supply and Installation of Clean Room Luminaires of make Philips, Wipro, Bajaj or Equivalent. The luminaires for surface or recessed mounting should flush with the ceiling, for 2 or 3 T5 fluorescent lamps (49 or 54 W), 0 16 mm. with highly-specular, anodized aluminium reflectors and optical anti-glare system for individually adjustable light distribution. The luminaires cover shall be made of highly-resistant; disinfectant-proof laminated safety glass with stylish fine-grained surface, glass pane with white coated steel frame. Closing devices are integrated automatically in the electrical safety control without lines having to be connected to the luminaires housing. Luminaires body shall be made of sheet steel, white, powder-coated, supplied ready for connection optionally for individual or series circuit, with digital, electronic control gear in Multi-Lamp technology. Mains supply and further wiring by means of Pg 16 screw glands. Luminaires shall be provided with four-pole connection terminal and earth connection terminal for wires up to 2.5 mm2 for mains supply and further wiring. Luminaires with ENEC and F mark, degree of protection IP 65, and protection class I, 230 V, 50M Hz .Recessed frames shall be provided for the gas-tight installation of clean-room luminaries IP 65 rating in suspended ceilings. Frame shall be made of extruded aluminium profile, white, powder-coated, able to be put together to form a rigid, continuous frame by means of plug and screw connections, optionally in individual, continuous-line, rectangular or U-shaped arrangements. Edge for ceiling construction material shall have angular edges for covering the raw edge of the ceiling construction material.	8	sets		
15	Supply, Installation, testing and commissioning of HD Camera of make Siemens, Panasonic, Nikon, Sony. Certificate of Origin must be given. It should have provision of Built-in camera system in the LED OT Light that can be detachable as and when required. Signal system HD 1080i Resolution 20,00,000 pixel Sensor type 1/3" Clear Vid CMDS Sensor Lens F 1.8 to F 2.1 Zoom 120 x (10 x optical, 12 x digital) Viewing angle 500 (wide) to 5.40 (tele). Auto Focus yes, lockable Electronic shutter 1/2 to 1/10,000 s in 21 steps	2	nos		
16	Supply, Installation, testing and commissioning of HD Monitor with extension arm of make Siemens, Panasonic, Sony. Certificate of Origin must be given.	2	nos		
	Picture size 24" HD (610 mm)				
	LCD panel a S1 TFT Active Matrix, in plane switching				
	Aspect ratio 16:10				

	Resolution 1920 x 1200 (WU x GA) Luminance 500 cd/m2				
	Contrast ratio 700:1				
	Number of colours 16.8 million				
	Viewing angle 1780				
	Response time 5 to 12 ms				
17	Supply and Installation of Electrical Distribution panel Board. Electrical Distribution Board shall have high voltage equipment and shall be installed in a separate enclosure. The remote cabinet shall house the operating lamp transformers, mains failure relays, electrical distribution equipment and circuit protection equipment for all circuits within the operating theatre. All internal wiring shall terminate in connectors with screw and clamp spring connections of the Clip-on type mounted, on a DIN rail. Individual fuses or miniature circuit breakers should protect all internal circuits.	3	nos		
18	Supply, Installation, testing and commissioning of Crash Guard Rail system fixed to wall at 900mm canter high from finished floor level comprising continuous aluminium rail retainer, adjustable rail mounting base, with Impact absorbing strip, end cap and high impact vinyl acrylic snap-on textured surface cover. “140mm Height x 80mm thickness” complete of makes Pawling Systems, Jinan HengSheng Protective Building Materials Co., Ltd, Shanghai Unitech Plastic Co., Ltd.	115	Mtr		
19	Supply, Installation, testing and commissioning of Corner Guard protection system fixed to brick wall at the corner from finished floor level. It should have adjustable end cap. High impact vinyl acrylic snap-on matt finished. “50mm wide x 10mm thickness x 900mm length “. Corner guard system should consist of following: PVC cover, base, top and bottom end cap in different colour etc complete of make Pawling Systems, Jinan HengSheng Protective Building Materials Co., Ltd, Shanghai Unitech Plastic Co., Ltd.	50	Each		
20	Supply, Installation, testing and commissioning of Aluminium Ducting 20/22" with closed cell nitryl insulation inside OT as approved by site in charge.	8	LOT		
21	Supply and Installation of Inside OT Electric wiring, conducting, cable etc. of make RR/Kalinga/Havel’s/Finolex.	8	LOT		
22	Supply and Installation of High Voltage industrial socket with metal box, complete of make Anchor /Northwest /Havells /Crabtree	20	Each		

23	Supply & Installation of Imported LED OT Light of make TRILUX /Stryker /Berchotid /Martin /Steris/ Maquet/ALM/Dr MACH or Equivalent 160000Lux X 160000Lux. Certificate of Origin must be given. It shall be Twin dome and power LED which should provide direct, reflection free illumination giving double efficiency compared to conventional light source. It shall provide cool infrared- free light at the head area of the surgeon for fatigue-free operating and prevent tissue from drying out in the OT field. It shall have LFL lens combination and have the primary optics which guides the light in a parallel, while secondary optics ensures beams of coherent light. The results should provide an excellent illumination in the OT field in terms of area and depth. It should have a flat, sealed light body specially designed for laminar flow ceilings. It should have flow optimized light head and reduced surface temperature to minimize turbulences in laminar air flow. It should have individually adjustable colour temperature in three stages from 3800 Kelvin, 4300Kelvin, 4800 Kelvin.	8	Each		
	The high illumination intensity should be 160000lux at 1m distance. Colour rendering index RA>95.				
	Light field diameter: 200-300mm Depth of illumination: 850-900mmInfra-red thermal radiation at 100000 Lux: 325W/m2				
	Lamp service life >40000 hours				
	Protection category of light head: IP54				
	Dimensions of light head: approx 800mm				
	It should have green light for endoscopic illumination.				
	Radio module per light head for wall and remote control. It should have Remote control portable.				
	It should have Preparation for full HD camera with 3 cable				
24	Supply Installation commissioning and testing of Uninterrupted power supply of 15 KVA Output of make APC, Alliance, MG electrical.	8	Nos		
	Power Rating-KVA/KW 15/12				
	Input-Three Phase				
	Nominal Voltage: 415/240 Vac (3 Phase-4 Wire+G) Voltage Range: 270-485 (Line to Line)				
	-156-280Vac (line to Neutral)				
	Power Factor: Better than 0.95				
	Frequency: 50+/_ 3 Hz. Output- Single Phase Voltage: 220/230/240 Volts (Single Phase) Voltage Harmonic Distortion </= 3% (Linear Load) Voltage Regulation: +/- 2%				
	Frequency: 50 +/- 0.1 Hz.				
	Over load capacity 102-125% -1 Minute				
	125-150% -30 seconds				
	>150%- 2 seconds				
	Battery & Charger				
	Nominal Voltage: 240Vdc Electrical connection Terminal Block Back Up Time: One Hour				

	Environment				
	Operating Temp: 0-40 degree Cent.				
	Relative Humidity 5-95% (Non Condensing)				
	Audible Noise at 1 Meter: <60dbA				
25	Providing and placing in position SS Crash cart of size –940-950 mm X 50 mm X 1525-1550 mm made from SS 304 with food grade polystyrene and drawer units having six movable bins, two polystyrene storage units with three drawers Each, Three laminated shelves, 125 mm diameter castors, Corner buffers, Oxygen cylinder holder, Electric lamp and IV rod complete.	2	Nos		
26	Providing and placing in position SS 304 foot stools 200 X 450 X 250 with 4 legs and chequered plate on top to avoid slippage complete Stainless Steel Foot Stools with chequered plate at top	8	Nos		
27	Providing and placing in position SS 304 Grade IV Stand of standard size as approved by Engineer in charge.	8	Nos		
28	Providing and placing in position SS 304 Grade Surgical instruments trolley 800x900 top, 350 wide and 900 height (like Mayo Trolley) as approved by Engineer in charge.	8	Nos		
29	Supply installation and commissioning of syringe infusion pumps of make Medtronic, B.Braun. Care fusion, Fresenius-kabi. It should be a light weight compact, CE certified unit. It should accept indigenous syringes of 10 to 50/60 ml and should auto detect the syringe size. The loading of syringe should be failsafe with alarms for improper loading / engagement of plunger. Maximum flow rate should not be less than 400 ml with a bolus rate of not less than 500 ml. The flow rate accuracy should not be less than 2%. There should be a KVO mode. There should be a selectable occlusion pressure alarm. There should be a display of infused volume / drug name. There should be a volume achieved / syringe empty alarm. It should work on commonly available 220 V AC with a battery backup of not less than 4 hours.	8	Nos		
30	Medical air system (twin) equivalent to Anaest Iwata model TFT50 C-9 22.93 CFM with 5 HP, 3 Phase electric motors, Air Dryer 30, Air receiver 1000lt, 3 Stage Filtration unit, Imported through Domnik Hunter with critical maintenance free technology.	1	Nos		
31	Supply, installation, Testing and Commissioning of electric Cautry of make Ethicon, B.Braun, Covedien. It should be a fully solid state machine. There should be separate mono and bi polar outputs derived from independent generators. Cut, Blend-cut & Coagulation modes should be available with hand and foot switch control. It should be audio-visual indication for the mode in use. It should be built in simultaneous two switch press safety. It should be continuous patient plate monitoring with safety alarm and deactivation in case of disconnection. Cooling should be by natural convection currents (no cooling fans required). The maximum power output should not be less than Mono Cut -----375 W Mono Coag-----125W Bipolar ------80 W.	8	Nos		

32	Supply, installation, Testing and Commissioning of Electrical suction Machine of approved make Maquet, Olympus, Penlon, Stryker as per ISI 7080(Pt III). It should be capable of displacing at least 40 liters / min. and creating negative pressure of Upto 700 mm of Hg. This pressure should be regulated through a control knob. It should be powered by ¼ HP Crompton or equivalent motor. The machine should be mounted on antistatic castors. There should be a large size (at least 10 cm) Bourden type gauge to show the pressure on front panel. There should be two interconnected polycarbonate (autoclavable) jars of 2-liter capacity with self-sealing stopper with integrated overflow protection device. The pump should be of concealed oil immersion type. It should be a medical grade machine with noise level of less than 50 dB. Electrical rating of 220/230 V, 50 Hz & power rating of < 5 Amp. The motor should have an automatic lubrication system. The on/off switch should be a spark-containing switch. It should be supplied complete with two jars, electrical cord and 10-mm dia. Non-collapsible tubing; ready for use.	8	Nos		
33	DOUBLE ARM MOVEABLE PENDANT (IMPORTED)- FOR SURGEON	8	Nos		
	The Ceiling Pendant Systems designed to provide convenient positioning of medical equipment, medical gas terminal units, electrical and specialty services. The ceiling Pendants should comply with NFPA 99 or USA / HTM 2022 or BSEN 60601 or ISO-11197. The support arms should be extremely safe, robust and ergonomic revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position. Should be UL listed / CE marked / FDA approved				
	The Pendant should be available as follows.				
	1. Should have 1000mm moveable arm (2 nos.) with at least 330 deg. Or more Horizontal movements and also Vertical height articulation motion. Vertical articulation should be motorized.				
	2. The Weight carrying capacity of the arm should not be less than 150Kgs.				
	3. Each arm should be capable of at least 300 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.				
	4. The arm should be fitted with Electromagnetic / Pneumatic brakes to prevent inadvertent movement.				
	5. The Pendant Service Heads should have modular head. The head should be capable of accepting a range of shelves (5 nos.), and infusion poles or other accessories. 6. The Pendant Service Head should be supplied with medical gas terminal units and 5/15 Amps. Sockets. Each Pendant should have:				
	Oxygen Outlets -2, Nitrous Oxide Outlet -1, Air (4 bar)-1, Air (7 bar) Outlets -1, AGSS Outlets – 1, CO2 Outlet -1 , Vacuum Outlets -2 Electrical Sockets -10nos.				
	Monitor input & output -1no.				
	7. Each pendant should have: Should have Maintenance free, Electromagnetic/Pneumatic system				
	8. Brake indictors “Brake Guide – Should be available with visual feedback				
	(LED Illumination)				

	9. Should have smooth and easy movement with high payloads.				
	10. Should have quick and easy adjustment of stops.				
	11. Should have simple ceiling cover installation due to inform diameter of ceiling tube and bearing Securely fastened end caps (can only be removed with a tool)				
	12. Should have unobstructed throughput capacity for supply lines – at least 110mm Cable protection chambers in drop tube (no wedging or obstructions)				
	13. There should be a Boom suspension for 26" HD progressive scan flat panel monitor having features of horizontal and vertical movements.				
34	SINGLE ARM MOVEABLE PENDANT (IMPORTED) - FOR ANESTHESIA	8	Nos		
	The Ceiling Pendant Systems designed to provide convenient positioning of medical equipment, medical gas terminal units, electrical and specialty services. The ceiling Pendants should comply with NFPA 99 or USA / HTM 2022 or BSEN 60601 or ISO-11197. The support arms should be extremely safe, robust and ergonomic revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position. Should be UL listed / CE marked / FDA approved				
	The Pendant should be available as follows.				
	1. 1000mm moveable arm with at least 330 deg. Or more Horizontal movements and also Vertical height articulation motion. Vertical articulation should be motorized.				
	2. The Weight carrying capacity of the arm should not be less than 200Kgs.				
	3. The arm should have anaesthesia machine lifting arrangement. The head of the pendant should move the machine up and down.				
	4. The arm should be capable of at least 330 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.				
	5. The arm should be fitted with Electromagnetic / Pneumatic brakes to prevent inadvertent movement. 6. The Pendant Service Heads should have modular head. The head should be capable of accepting a range of shelves drawers and infusion poles or other accessories.				
	7. The Pendant Service Head should be supplied with medical gas terminal units and 5/15 Amps. Sockets.				
	Each Pendant should have:				
	Oxygen Outlets -2, Nitrous Oxide Outlet -1, Air (4 bar)-1, Air (7 bar) Outlets -1				
	AGSS Outlets – 1, CO2 Outlet -1 , Vacuum Outlets -2 Electrical Sockets -10nos.				
	I. Shelf with two rails one on each side – 1 no.				
	II. Monitor input & output -1no.				
	8. Each pendant should have: Should have Maintenance free, Electromagnetic/Pneumatic				
	9. Brake indictors "Brake Guide – Should be available with visual feedback				
	(LED Illumination)				
	10. Should have smooth and easy movement with high payloads.				
	11. Should have quick and easy adjustment of stops.				

	12. Should have simple ceiling cover installation due to inform diameter of ceiling tube and bearing Securely fastened end caps (can only be removed with a tool)				
	13. Should have unobstructed throughput capacity for supply lines – at least 110mm Cable protection chambers in drop tube (no wedging or obstructions)				
	14. There should be a Boom suspension for 26" HD progressive scan flat panel monitor having features of horizontal and vertical movements.				
35	Providing and Fixing high-end modular type US FDA approved multiparameter monitors capable of monitoring adult and paediatric patients for up to 14 parameters at a time of a make Draeger, GE, Philips, Schiller. It should have at least 16 inches diagonal high resolution flat panel active colour TFT LCD medical grade display with horizontal and vertical cursers. It should be able to show at least 8 waveforms with numeric and Waveform colours should be programmable. There should be automatic spacing of the waveforms depending upon the parameters chosen. There should be user configurable display modes with separate alarm display. It should have about 8-hours / 50 events trending facility and trends should be available in tabular as well as graphical display mode .There should be an event marker. POWER should run on commonly available 220 V 50 Hz AC. There should be integrated power back up for at least 120 minutes on full charge. It should be network ready for wired networking. It should give direct access to web based applications without extra servers or licenses. There should be audio & video hi/lo alarms for all the parameters monitored with coding for priority e.g. Life-threatening; Serious; Advice. .Auto setting of alarms as per current values should be available.	8	Nos		
	Following parameters should be available for monitoring:				
	ECG - 5/6 lead cable. It should be able to display 12 leads by internal algorithm on application of 5/6 leads. Simultaneous display of at least 2 leads with ST analysis.				
	Arrhythmia detection, count & alarm for asystole, V. fib. V. tach. / Run / bigemini, R on T, PVC/SVT.				
	The ECG tracing should be				
	Protected with a defibrillator & ESU filter. It should be able to detect & reject pacemaker spike and also exclude tall T wave from HR calculation.				
	ST analysis and advanced arrhythmia monitoring should be integrated with the ECG monitoring. IABP interface should also be there. RESPIRATION - Rate by thoracic impedance or derived from Capnography and should cover range 0 – 100 at least. The sensing technology should be motion & low perfusion tolerant Nellcor/ Masimo. NIBP - Oscilotonometric method with programmable timing (2-240 min) and manual over-ride should be suitable for patients of all ages. There should be non-invasive facility for continuous				

	beat to beat measurement & display of arterial pressure values & waveform. For temperature at least two channel configurable in C or F. For IBP - At least two or more channels with selectable labels connectible to non-proprietary commercially available disposable /reusable transducers. Simultaneous zeroing of both the transducers. Cardiac Output measurement should be possible. ANESTHESIA DEPTH MONITORING- Should be possible. Carbon di Oxide by side stream method inspired & expired concentration & waveform display. Auto-detection of Halothane, Isoflurane, Sevoflurane & Desflurane and display of their inspired & expired fractions.				
	RESPIRATORY MECHANICS – Digital & waveform display of flow, volume & pressure with provision for loops. Should be able to acquire from Anaesthesia Machine waveform & loop data and display on its own monitor. Trending of this data is also desirable. Following parameters should be available for upgradation of monitor as and when required-				
	1. 12 lead ECG with interpretation.				
	2. EEG – minimum 4 channels with spectrum				
	3. NMT				
	4 Drug dose calculation (preferably as standard).				
	In addition to above modules following accessories should form part of the scope of supply with each monitor –				
	ECG Cables – 3				
	SpO2 probes – 3 (reusable)				
	NIBP Cuff – 3 adult, 1 child & 1 infant; any other cuff if required 2				
	Temperature probes – Skin – 1 & Rectal – 1				
	IBP – 1 cable & consumables for 20 cases.				
	12 water traps & 10 sample lines for anaesthetic agent monitoring (if required)				
	Respiratory Mechanics Consumables (if required) – for 25 cases.				
	Also the equipment must be supplied with all accessories ready for use. Sufficient disposables must be supplied for proper use. The equipment is to be warranted for at least 12 months.				
	It should have green light for endoscopic illumination. Temperature at light head surface <27.5C.				
	Radio module per light head for wall and remote control. It should have Remote control portable.				
	It should have Preparation for full HD camera with 3 cable				

36	Providing compact Anaesthesia Machine with ventilator & integrated airway monitor of make Fabius Plus, Datex Ohmeda (GE),Philips, Siemens/ Drager, suitable for infant to adult patients US FDA approved. It should be compact Anesthesia Machine with ventilator & integrated airway monitor suitable for infant to adult patients. It should have a three gas system – Oxygen, Nitrous Oxide & Air. There should be non-interchangeable yokes for connecting the pipeline supply as well as reserve cylinders of Oxygen & Nitrous Oxide. Pressure Gauge for pipeline as well as cylinder pressure should be mounted. There should be dual cascade type flow meters in multi-scale calibration for Oxygen & Nitrous Oxide and a separate single tube flow meter for Air.3. There should be a separate bypass to attach semi closed circuit / Oxygen mask etc to the FGF. The machine should have provision for mounting two tec/quick mount type vaporizers with interlock. The vaporizers should be temperature & pressure compensated, flow independent, maintenance free precision vaporizers able to operate in the temperature range of 10º to 40º C.	8	Nos		
	It should not require any calibration and should have a transport lock. Vaporizers should be supplied with three machines are Isoflorane, Sevoflorane and Desflurane. It should have Breathing System of fresh gas decoupled semi closed circle system with absorber capacity of not less than 1.5 L. There should be a graduated APL valve (range ~ 0 to 60/65 mbar) and an adjustable pressure release valve (upto ~75 mbar).The changeover from spontaneous to ventilator should be through a single switch. It should be supplied with 2 adult and 1 paediatric circuits. The ventilator should be electronically controlled; electrically driven ands should not require a driving gas. There should be a single bellow suitable for all ages. Additionally it should have the following features –				
	MODES – Spontaneous, IPPV (Pressure Limited & PEEP), PCV PS & SIMV-PS				
	TV ~ 20 to 1000 ml				
	RATE ~ 10 to 60 bpm				
	I:E RATIO – 1:2 to 2:1				
	PEEP ~ 0 to 15 cm of water				
	PS ~ upto PEEP + 20 cm of water				
	Trigger ~ 2 – 10 lpm				
	P max – adjustable upto 70 cm of water				
	There should be integrated electronic monitoring of atleast the following ventilator parameters on suitable size colour screen –				
	Expired Tidal Volume				
	Expired Minute Volume				
	Rate				
	PEEP				
	FiO2				
	Airway Pressures – Peak, Plateau/ Mean				

	Waveform of Airway Pressure There should be a hypoxia guard to ensure delivery of at least 25% Oxygen. There should be an emergency Oxygen flush of more than 50 lpm which should bypass all the vaporizers. There should be an audible Oxygen failure alarm. In case of Oxygen failure the ventilator should automatically switch over to air & continue to ventilate. In case of power failure the ventilator should switch over to the backup battery and In case of a simultaneous failure of medical gases and power the ventilator should continue to ventilate on battery power using the ambient air. There should be adjustable high & low audio-visual alarms for Minute Volume, PAW, FiO2, fail to cycle & loss of power.				
	The machine should be powered by commonly available hospital power supply of 220 V, 50/60 Hz AC. It should also have an integrated battery backup for at least 30Minutes for all functions including the ventilator. A CVT if required should be supplied with the machines. It should be compatible to a valve less anaesthetic gas scavenging system with integrated buffer volume. These are for ceiling mounting of the Anaesthesia machines & monitors. All the components of the system should be from the same manufacturer. The machines should be supplied complete with all the required power cords, patient circuits (adult – 2 & paediatric – 1), user manual etc in ready to use condition. Spare items one pressure sensor, pressure sensor tubing and filters commonly used with each machine should be included in scope of supply.				
37	Providing operating tables for OT as per specifications for Electrically Operated Imported Operation Table of make Maquet, Trident, Berchtold .The table should be electrically operated with cable remote controls for different positions. Should be full length 'C-Arm' compatible, with 4 section radiolucent top and Interchangeable head and leg sections to provide free access to surgeons during surgeries. The table should be oil free, relatively maintenance free with smooth operations. Table should be solid casting frames for better stability. Table should have the following positions- up/down, Trendelburg and Reverse Trendelburg, Lateral tilt, Flex/Reflex, Chair. Table should be supplied with the standard accessories like Anaesthesia Frame, Shoulder support with pad, Lateral support with pad, Arm Board, Knee crutches, Wrist strap, Antistatic Mattress. It should be supplied with following Orthopaedic attachments like pelvic rest, pelvic support (radio translucent), inner thigh support (radio translucent), foot plate with ortho shoes, tibia attachment, hand surgery table (radio translucent), hand traction device (humerous positioning) spl. head rest	8	Nos		
	It should have battery backup of not less than 2 hours with nickel cadmium batteries.				

Note: - The items & quantities given are approximate and may vary in accordance with contract conditions.

The owner reserves the right to add or deduct any item/s in the tender during the pendency of the contract