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कोटेशन माग गरिएको सूचना ।
(पुनः सूचना प्रकाशित मिति: २०८१।०८।०६)

यस प्रतिष्ठानको लागि आवश्यक सलगन Specification वमोजिमको **Dental Various Equipments Setup Under Turnkey Project** को लागि तपशिलको मेशिन तथा उपकरणहरू खरिद गर्न लागत अनुमान तयार गर्नुपर्ने भएकोले सो प्रयोजनको लागि ईजाजत प्राप्त प्रतिष्ठानमा सुचिकृत फर्म, संस्था, कम्पनीवाट अद्यावधिक फर्म दर्ता प्रमाणपत्र, सु.अ.कर दर्ता प्रमाणपत्र, आ.व. २०७९/०८० को कर चुक्ताको प्रमाणपत्रको प्रतिहरू सलगन गरी यो सूचना प्रकाशित मितिले पांच (५) दिन भित्र कोटेशन तथा क्याटलगहरू पेश गर्नुहुन सुचित गरिन्छ । माग गरिएको कोटेशन तथा क्याटलगहरू तोकिएको म्यादभित्र प्रतिष्ठानको दर्ता, चलानी फाँटमा दर्ता गर्नुहुन वा quotation.procurement@bpkihs.edu मा email मार्फत पेश गर्नुपर्नेछ ।

SN	Product Name	Description/Brand
1.	Dental Chair	As per attached Technical Specification
2.	Central Oil Free Air Compressor & Suction System	
3.	Phantom Head Fitted with LED Light	
4.	Dental Lab Pressure Moulding Machine	
5.	Dental Diode Laser	
6.	CBCT Machine	
7.	3D Printer	
8.	Dental Microscope	
9.	Dental Operating Microscope	
10.	High End 3D Intraoral Scanner	
11.	5 Axis Milling Machine (CAD CAM Set)	
12.	CAD Machine	
13.	CAM Extraction Machine	
14.	Sintering Machine	
15.	Dental Compressor 3 HP CAD CAM	

Technical Specification Dental Various Equipments Setup Under Turnkey Project

Item no. 1

S.N.	Purchaser's Specifications	Bidder's Offer	Catalogue / Brochure Page No:	Bidder Remarks
A	Dental Chair			
	Manufacturer Brand			
	Brand			
	Type / Model-			
	Country of Origin-			
1	Description of Function			
1.1	Body Contoured Electrically Operated Microprocessor based Multi programmable (with 3 programs which can be re- programed with 1 fixed pre- program) Dental chair required for dental examination and surgical procedures with both left and right handed dentistry option.			
2	Operational Requirements			
2.1	Physiological dental chair operated by electricity with multiple positions for patient comfort, premium sofa type cushioned upholstery of good material and soothing color			
2.2	Seat, Back rest, and Articulated head rest are thickly cushioned with foam and covered with rexine, textured for easy and efficient cleaning.			
2.3	With high quality Acrylic plastic base, in white color			
3	System Configuration			
3.1	Electrically Operated Microprocessor based Four programmable Dental Chair two programmable with zero and gargle posiiton complete unit and with complete accessories.			
4	Technical Specifications			
4.1	Shall be electrically operated microprocessor based programs chair, handle one unit Left arm and Cushioned Arm rest with right arm rotatable for easy access of patient.			
4.2	The dental chair is floor mounted anti-skid base with rust free, painted with rubber mat for perfect stability and rigidity. It will not rock or tilt even under extra heavy load condition with testing at at least 175kgs.			
4.3	The chair movement should be controlled by means of microprocessor based PCB, which should have overload protection.			
4.4	The chair should have position retention accuracy which helps to retain the same position when program is recalled multiple times during the operation and some memory functions.			
4.5	Double articulated head rest Synchronized movement in back & base to provide convenient seating to patient while adjusting seat and back rest, premium sofa type cushioned with rexene.			
4.6	Head rest, with up and down movement for Adult and pedo patient and also for patients on the wheel chair.			
4.7	Body/Frame of the chair and unit should powder coated & epoxy painted and rust proof.			
4.8	Emergency switch should be available at doctor side.			
4.9	Complete chair switches becomes non-working, when airtor handpiece is in use by the surgeon			
4.10	Should come with detachable Chair side oval Glass/Ceramic spittoon with auto water connection for spittoon and tumbler by Switch on assistant side and on dentist console			

4.11	System must be equipped with disinfection system & assembly for airotor/airmotor & 3way syringe couplings			
4.12	Should come with autoclaveable steel tray.			
4.13	Anti crushing system , for breakage safety			
4.12	Monitor mounting arm with integrated power cable and camera (future upgradability)			
4.13	Should be compatible with wetline suction system with a noise cancellation box			
4.14	Each unit should be fitted with spitton bowl valve so that the spitton is connected with the centralized suction system therefore no drain line is required			
4.15	Wetline Suction equipped (Please refer to the suction specs)			
4.16	Chair should have double tray system, for extra stuff placement			
4.17	Main Doctor Trolley system: Modular Trolley system with following features:			
I	Over head delivery Unit hangers should be without lock, Balanced hangers with no locks should be there.			
II	Delivery unit can rotate ± 70 degree for ergonomics to reach patients with 2 air rotor points (that can connect to airmotor) , 1 brushless micromotor, one fiber optic scalar, one 3 way syringe			
III	Brushless Electric Micromotor that accepts 1:5 speed enhancing handpiece (max. speed upto 2,00,000 rpm). NSK/Kavo equivalent			
IV	3-way syringes for air,water and spray functions, with detachable and autoclaveable tips- 2 nos			
V	Flip type LED x-ray viewer. Upto occlusal view			
VI	Silicon & durable tubing with NRV.			
VII	Should have multiple customized programs			
VIII	Dedicated switches for warm water, normal water, spitton rinse & light switch ON/OFF.			
IX	A wide Stainless steel tray available,			
XI	Assistant arm should have soft touch panel with chair up-down & back to-fro switches.			
XI	Piezoelectric Ultrasonic Scaler with high frequency (automatic frequency tracking) microcomputer controlled, detachable metal Optic handpiece having general, perio & endo function supplied with titanium coated five scaling Tips.			
XII	Light and modular trolley mounted on "T" channel with arm			
XIII	Complete chair should get locked, while using Airotor			
XIV	Dual wide tray available, with silicon padding.			
XV	Suction with time delay function, for atleast 3 seconds			
4.17	Operating Light:			
I	Should come with sensor controlled shadow free LED Lights with approx. 30000 Lux, color rendering index not less than 90. Light should have vertical, horizontal axial & diagonal movements for proper focusing.			
II	• 3 axis rotation & 3 light intensity settings.			
III	LED should have 3 yellow lights as well			
IV	Light should have display, to show temperature and intensity.			
V	Light should be sensor based. And intensity can be controlled with sensor only.			
VI	• Controlling switch should be available on right side.			
4.18	Assistant Trolley system: Trolley system with following features:			
I	Big size & movable assistant arm is available for easy reach to doctor & assistant.			
II	3- way syringes for air, water and spray functions, with detachable and autoclaveable tips, 2 nos.			

III	Loaded with low vacuum high volume & high vacuum low volume suction tubing, individual filter and cannula. (compatible with wet line suction) & each chair must have place selection valve			
IV	Suctions have aspiration control switches on cannulas itself.			
V	Time delay function should be available in suction.			
VI	Time Delay Function: After using & putting back the suction, it should remain active for 3 seconds to push out the unwanted & contaminated material into sump and keep the tubing clean & maintain the longevity.			
4.19	Cordless LED Light Cure Unit with protective shield and preset timings. Cordless			
I	Must have 7 modes with uniform beam, light intensity upto 3000mW/cm ²			
II	Inbuilt intensity meter			
III	10w high power with wave length 385nm-515nm			
5	Accessories, spares and consumables			
5.1	Accessories:			
I	Ergonomic Pneumatic stool: 1 Nos. With height adjustment of the back rest , seat rest, the tiltable seatrest for ergonomics ,should have 3 pneumatic pistons for the best ergonomics and legs should be made of SS/chromium steel and back adjustment controls.			
II	Contra- Angle 1:5 direct drive push button handpiece with 2,00,000 rpm & Water Spray (NSK/KAVO)			
III	Contra angle 1:1 push button handpc (NSK/Kavo equivalent)			
IV	HIGH SPEED HANDPIECE			
	Stainless Steel Body • Ceramic Bearings • Clean Head System • Push Button Chuck • Quattro Spray anti retraction valve for infection control (NSK/KAVO)			
	Standard Head : Power : 16W (M4, B2) / 14W (QD), Speed : 330,000~430,000 min ⁻¹ , Head Size : ø12.1 xH13.3mm			
V	For HP burs (ø2.35) • Max Speed: 40,000 m straight headpiece (NSK/KAVO)			
VI	Unit should have neck and back rest cushion of the same color and material			
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	Standards and Safety Requirements			
6.1	Must submit IS013485:2016/AC:2007 for Medical Devices AND			
6.2	CE (93/42 EEC Directives) and/or USFDA listing certificate.			
6.3	CE (93/42 EEC Directives) & USFDA approved product certificate for all handpcs, scalar, light cure units			
6.4	Licence to Manufacture for Sale or for Distribution of Class A or Class B medical device			
6.5	Electrical safety conforms to standards for electrical safety IEC-60601-1.			

Item no. 2

S.N.	Purchaser's Specifications	Bidder's offer	Catalogue / Brochure Page No:	Bidder Remarks
B	Central Oil Free Air Compressor & Suction System			
	Manufacturer Brand			
	Brand			
	Type / Model:			
	Country of Origin:			
1	Description of Function			
1.1	Dental Oil Free Medical grade air compressor that provides positive airway pressure to operate dental chair and its attachments. Dental Suction System that provides negative pressure for the suction of saliva, blood, wastewater and filling materials during the dental treatment.			
2	Operational Requirements			
2.1	A centralized filtered air pressure via pipeline and centralized suction system with built in filter via pipeline to dental chairs in various department of CODS.			
3	System Configuration			
3.1	Oil-free Medical Grade Central Air Compressor of 20 KW along with Suitable Refrigeration Air Dryer, Filters & Adequate Capacity Gas Tank - 2 Complete Set			
4	Technical Specifications			
4.1	Each unit shall be able to supply and run/operate around 50 dental chairs simultaneously.			
4.2	Central Scroll Type Air Compressor 3 phase (380 VAC/ 50 Hz.)			
4.3	The air compressor should be of compact, box type design having independent pump control system with overload and over temperature protection function & must be of ultra-quiet operation.			
4.5	Equipped with a gas storage tank capacity of 1200 ltrs.or more treated with nano coating for rust free to provide continuous and stable gas flow.			
4.6	Maximum Air Flow Rate: 4000 LPM			
4.7	Rated Air Flow Rate : 2000 LPM			
4.8	Exhaust Air Volume Rate : 2200 LPM or better			
4.9	Operating Pressure For Rated Air Flow : 7- 8 BAR or 120PSI			
4.10	The maximum pressure must be 1.3mpa and working temperature in the range of -30deg to 100deg celsius			
4.11	Refrigeration Air Dryer & three-stage precision filtration (0.01µm), which can filter 90% of the moisture and impurities in the air to provide a dry, clean air.			
4.12	The main engine connecting pipeline adopts full-performance seamless extruded aluminum alloy tube.The interior is smooth and flat, and the pipe wall is not easy to corrode.			
4.13	There is no need for welding, gluing, etc. in the pipeline connection. Accessories are removable and reusable for easy installation.			
4.14	High precision sensor & multiple protected circuit board for precise control			
4.15	CNC display board shows the internal temperature, working state of pump head, running time, fault state etc. for easy maintenance			

4.17	Cold Drying Machine has a capacity of minimum 1 cubic mtr. it externally connect polymer hollow fiber membrane drying system & bacterial filter, providing medical grade air, dew temperature -20°C ~ 5°C(adjustable) & dry 90% moisture, filter air impurities upto 0.01µm			
4.18	Dust filter and microbial filter fitted on epoxy coated antimicrobial tank			
4.19	Each units must have a sound proof processor, sound proof canopy for low sound and vibration			
4.20	Tank must have external pressure display which indicates tank pressure,			
4.21	Should be of Medical Grade, Oil free, Noise Free (≤ 70 dB.)			
4.22	Should automatically control the ON/OFF of each motor according to the workload.			
4.23	Connectors and other accessories required for functioning should be provided by supplier.			
4.24	Should have gauge and auto cut off features for safety.			
5	Two Set Integrated Type Centralized Suction System Unit Suitable for CODS, Each should be synchronized			
5.1	Central suction system must have modular design, intelligent control, anti corrosion, inner tank coating, anti microbial			
5.2	Three units of Centralized Suction System with filter & pipeline.Two operational @ a time and one standby for reliability continuous operation.			
5.3	Each unit supporting/providing suction/negative pressure for around 50 dental chairs simultaneously.i.e. all three units supporting around 150 dental chairs simultaneously.			
5.4	Central Suction Unit with Filter & Pipeline should be compatible and support entire dental chairs of CODS (department of prosthodontics, department of oral surgery, department of periodontics, department of pedodontics, department of orthodontics & department of conservative dentistry) simultanesouly.			
5.5	It should have semi dry line suction system, High suction power, stable & concentreted.			
5.6	It should have internal noise reduction system and frequency adjustable technology that can adjust the flow according to the chairs that are actually being used i.e.intelligent control.			
5.7	Pumping Capacity should be 15000 LPM or more			
5.8	Noise level must be ≤ 70 db.			
5.9	Stoage Tank of 1000 Ltrs. or more			
5.10	Vacuum or Suction Pressure @ each dental chair should be around 0.20 - 0.40 bar / 03 - 06 psi.			
5.11	Rated Suction Flow Rate @ each chair should be 250-300 LPM			
5.12	It should have easy access to the debris & saliva filter separator.			
5.13	Power Supply : 3-phase power supply (380VAC & 35-80 Hz.)			
5.14	Electric Motor : 11.5KW (15 HP) or more			
5.15	Rated Flow : 15000 LPM or more			
5.16	Vacuum : -20KPa/-24KPa Min. -200mbar/20kpa & max.-500mbar/50kpa			
5.17	Anti Reflux Valve : Must be installed in each suction line to prevent contamination & backflow of fluids.			
5.18	Centralized filter units capable of trapping fine particulate matter & airborne contaminants.			

5.19	Automatic Purge System : Should have automatic purging system for periodic purging of suction lines to prevent biofilm & clogging.			
5.20	Safety Shut-Off Valves : Should be installed @ every suction points to ensure safety during maintenance or system failure.			
5.21	System must have exhaust system with appropriate filter.			
5.22	System must have robust control system with control panel and advance alarm system			
6	Piping System And Electrical			
6.1	Should be done all piping work under the site condition as per required size and length from central air compresor tank to each dental chair and return pipe up to compressor tank.			
6.2	All suction pipeline should be done under the site condition as per required size and length from central suction system to each dental chair,each bend should be 45°			
6.3	One electrical point will be provided if extra electrical point required all work should be done.			
6.4	All civil works, electrical works & electro-biomedical works required to be done for the proper installation, testing, commissioning & operation of above mentioned entire system is the part of bidder and no extra cost chargeable on the purchaser.			
7	Accessories, spares and consumables			
7.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
8	Standards and Safety Requirements			
8.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
8.2	CE (93/42 EEC Directives) & USFDA certified product certificate.			
8.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item no. 3

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
C	Phantom Head Fitted with LED light			
	Manufacturer Brand			
	Brand			
	Type / Model:			
	Country of Origin:			
1	Description of Function			
1.1	The dental phantom head should replicate human head anatomy for realistic training and practice in dental procedures.			
2	Operational Requirements			
2.1	The phantom head should be durable, made from high quality material suitable for extensive use in the medical institutions.			
2.2	Easy to mount and demount system for quick installation on simulation units or training table			

2.3	The system system should include adjustable and shadowless LED Light for enhanced visibility during training & practice in dental procedures.			
3	Technical Specifications			
3.1	Pre-clinical table should have stainless steel top suitable for working of minimum 2 students at a time.			
3.2	Operating LED Light with adjustable arm for positioning the light and have energy efficient power supply with adjustable intensity and be shadowless with minimum illumination of 28000 Lux & color temperature of minimum 5500K.			
3.3	It should have two airrotor points with push button type and foot control.			
3.4	It should have dust proof micro motor with minimum 35000 RPM.			
3.5	It should have minimum 1 number of 3 way syringe.			
3.6	It should have Mankin body of ABS fitted with pneumatic piston for tilting movement (up, down, rotate).			
3.7	It should have Phantom head of high quality with ball and socket, neck joint for all the movement of neck, TMJ.			
3.8	It should have movement, provision to fix TMJ in open position. Excellent quality face mask, total closed oral cavity, drain nipple to drain the water.			
3.9	It should have artificial upper and lower jaw provision to adopt typhodont set.			
3.10	It should have soft typhodont jaw with 32 ivory teeth.			
3.11	It should have working stool with pneumatic height adjustment.			
3.12	It should include a modular oral cavity insert for different practice simulations (e.g. restorative, endodontic)			
4	Compressor for Phantom Table			
4.1	Compressor should be oil free, medical grade and should have dry air output.			
4.2	Supply must be 220/440 Volts 50Hz.			
4.3	Minimum Capacity 800 L/Min or more.			
4.4	Pressure should regulating type up to 8 kgf/cm ²			
4.5	Minimum Air Tank Capacity of 100 ltrs. Or above			
4.6	It should have all Electrical and Mechanical Safety Devices for safe and proper operation.			
4.7	Each system should have filters, automatic drainage system, pressure gauge, electrical controlling system etc.			
4.8	Noise level must be ≤80db.			
4.9	All pipeline along with civil, mechanical & electrical works should be done as per site requirement by the bidder at its own cost.			
5	Accessories, spares , accessories and consumables			
5.10	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6.0	Standards and safety requirements			
6.1	Must submit ISO13485:2003/AC:2007 for medical devices AND			
6.2	CE (93/42 EEC Directives) and/or USFDA approved product certificate.			

6.3	Shall meet IEC-60601-1-2:2001 General requirements of safety for electromagnetic compatibility or must comply with 89/366/EEC; EMC Directive.			
6.4	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for electrical safety of Medical equipment.			

Item no. 4

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
D	Dental Lab Pressure Moulding Machine			
	Manufacturer Brand			
	Brand:			
	Type / Model:			
	Country of Origin:			
1	Description of Function			
1.1	A pressure molding machine for dental applications, used primarily to create custom dental appliances by molding thermoplastic materials over dental models.It applies controlled pressure and heat to soften the thermoplastic sheets, allowing them to form precisely over dental impressions or model.			
2	Operational Requirements			
	Pressure moulding machine designed for thermoforming dental appliances and prosthetics such as retainers, mouthguards, aligners, nightguards, splints and other orthodontics & equipped with scan technology, integrated heating system,intuitive user interface, pre-programmed and customizable functions,vacuum and upto 6 bar working air pressure			
3	System Configuration			
3.1	Pressure moulding unit complete with accessories			
3.2	Should have acoustic and optical user prompting			
4	Technical Specifications			
4.1	Heating Technology : Infrared heating technology with programmable controls.			
4.2	Advanced short wave, thermostatically control infrared heater reaching working temperature in 1 sec.			
4.3	Cycle Time : 10-15 minutes maximum			
4.4	Automation : Automatic/Semi-Automatic			
4.5	Coloured 3.2" or more LCD display with a resolution of atleast 320 x 240 pixel leads you through the single working steps of the pressure moulding process,			
4.6	Must have illustrated application hints and animated videos with continuous display of air pressure throughout the moulding process.			
4.7	Should have data base that provides information on scanned material and indications.Customizable settings for different materials.			

4.8	Should have scan function for immediate programming & bar code reading. The scan function must prevent programming errors or choice of wrong material.			
4.9	Should have membrane keyboard for programming and controlling of all operation parameters.			
4.10	Should have enlarged model cup for embedding of articulated as well as mounted models			
4.11	Should be able to thermoform materials of varying thickness, ranging from 0.5mm to 5mm, allowing flexibility in creating different types of appliances.			
4.12	Machine must be designed such that the pellets are reusable and do not adhere to the soft material			
4.13	Should have feature of dual layer lamination for stronger appliances			
4.14	Should have powerful vacuum pump			
4.15	Should have adjustable temperature control upto 200°C or more , depending on the specific material being processed.			
4.16	Should have safety features such as automatic overheat protection, pressure release valve to ensure safe release of pressure & emergency stop button in case of malfunction.			
4.17	Working Air Pressure : 0.5 to 6.0 BAR or better			
4.18	Noise Level : ≤50 dB			
4.19	Power Consumption : ≤ 750 Watts			
4.20	Power Supply : 220-240 VAC, 50/60 Hz			
5.0	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	Standards and Safety Requirements			
6.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND			
6.2	CE (93/42 EEC Directives) and/or USFDA approved product certificate.			
6.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item no. 5

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
E	Dental Diode Laser			
	Manufacturer Brand			
	Brand:			
	Type / Model:			
	Country of Origin:			
1	Dental Diode laser for wide range of oral soft tissue surgeries and especially small prominent lesions.			
2	Healing Benefits: Must demonstrate reduced post-operative discomfort, minimal bleeding and faster recovery times compared to traditional methods.			
3	Technical Specifications :			

i)	Laser must be INGasP semi conductor Type Class IV classification			
ii)	Maximum Output Power upto 10W CW, Power accuracy +/- 20%			
iii)	Must have 20 preset programs or more			
iv)	Wavelength: 940nm			
v)	Operation Mode: CW, Pulsed			
vi)	Pulse Interval : 0.01ms-20ms			
vi)	Pulse Repetition rate : upto 20KHz			
vii)	Aiming Beam: 625-670nm, 1mW max			
ix)	Control Interface : User friendly touch screen display of size at least 4 ".			
x)	Operating Life: Greater than 10,000 hours			
xi)	Efficient cooling system to prevent overheating during prolonged use.			
xii)	Power: 0.1 W to 10 W (CW Mode)			
xiii)	Operating Voltage: 100-220V			
xiv)	Dimension,Weight & Design : Should be compact, portable, light weight & ergonomically designed with re-chargeable lithium ion battery			
xv)	Automatic shutdown in case of any malfunction			
xvi)	Laser classification and protection: class 4 ,Class I			
xvii)	Fiber cable length must be 5ft or more			
xviii)	No of tips must be 30 atleast			
xix)	Maximum Fluence 350j/CM			
xx)	Beam Divergence 8°-22° per side angle			
xxi)	Maximum Permissible Exposure 10w/m2			
xxii)	Handpiece type: Pen and stylus type and wireless foot control.			
xxiii)	Handpiece head angles must be 400 microns			
xxiv)	Spot size surgical handpc 400microns, deep tissue handpc 30mm dia+7.1cm2, whitening handpc-35mmx8mm			
3	Accessories, spares and consumables			
3.1	* Surgical HP- 02 Nos., * Laser Safety Glasses- 03 Nos., * Power Cord With power Supply -01 No., * Wireless Footswitch - 01 No., * Tip Initiation Kit - 01 No., * Goggles – 03 Nos.			
3.2	Autoclavable, Bendable Tips			
	* 400 micron - 4mm, 7mm 9mm, * 300 micron - 4mm, 7mm 9mm, * 200 micron - 14mm. 20mm			
3.3	Optional Handpiece			
	* Whitening Handpiece - 01 No. * Deep tissue Handpiece - 01 No.			
4	Standards and Safety Requirements			
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND			
4.2	CE (93/42 EEC Directives) and USFDA approved product certificate.			
4.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item no. 6

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
F	CBCT MACHINE			
	Manufacturer Brand			
	Brand:			
	Type / Model:			
	Country of Origin:			
1	Description of function:			
	To scan maxillofacial region for diagnosis and treatment planning for Orthodontics, Implantology, Maxillofacial Surgery and ENT			
	Impression and model scanning capability with STL output			
2	System Configuration:			
	As per described in technical specification below			
3	Technical Specification			
	The X-ray system must have microprocessor-controlled generator with very high operating frequency, 2D, 3D CBCT & Ceph. as standard			
3.1	X-Ray Generator should be High Frequency DC Generator			
i	Tube Voltage should be approx. 60 - 120 KV, with a provision for tube voltage >100 kv for reduction of artifacts and overall improved image quality			
ii	Tube Current should be approx 2-15 mA			
iii	Frequency should be approx 140 kHz			
iv	Tube Focal Spot should be approx 0.3/0.7 mm			
v	Dose should be 4-194 μ Sv			
vi	Total filtration should be : > 2.5 mm eq of aluminium			
vii	Artificial Intelligence Integrated Patient Positioning module: a) The unit should be capable of analysing patient morphology to automatically calculate the right exposure settings and trajectory, or to precisely define the field-of-view position and X-ray Parameters. b) The unit should have live positioning assistant, which simplifies patient positioning using live patient views in front of the user on a touch screen pad—eliminating the need for laser beams. c) Should have easy, AI based indication for the correct accessory in use for different types of exams d) Unit should be capable of maintaining Patient history records, provide access to the scanning parameters of a returning patient with the touch of a button, streamlining workflow and speeding follow-ups.			
viii	Patient Position & Orientation: Standing or seated (wheelchair accessible). • Face-to-face positioning.			
3.2	Panoramic Modality- 2D			
i	Panoramic imaging possible with anotation and measurement. Ceph with Auto-Tracing & Auto Land marking. Film Composer & Template Editor.			
ii	Sensor Type should be CMOS sensor with advanced sharpness filters			
iii	Sensor Matrix: approx 64 x 1400 pixels			

iv	The resolution must be 100 microns or more.			
v	Program: 10 or more anatomical settings with Adult / Child Panoramic			
vi	Exposure Time should be 0.5-13 seconds			
vii	Gray Scale : 14 bits or more			
viii	Magnification should be 1.28 or better			
ix	Should have ability to generate full mouth series of radiographs at extra oral resolution with a single command			
x	System must have laser-free & AI/camera assisted patient positioning system (Live positioning through integrated cameras must be possible)			
xi	The unit must have the ability to automatically detect landmarks using AI for correct patient positioning			
xii	The unit must have integrated speaker and audio communication system for patient communication alongside GUI with touch panel. An additional remote switch must be available to be mounted outside the room for exposure			
xiii	The unit must have the capability to auto suggest exposure parameters based on patient jaw morphology/size			
xiv	The unit should be able to take Bitewing panoramic images, TMJ, maxillary sinus in the panoramic mode, segmented panoramic			
3.3	3D Modality			
	3D Images can be viewed Slice-by-Slice in Axial, Coronal, Sagittal, Cross-Sectional and Oblique views for enhanced diagnostic interpretation. Implant Planning Module Provided. Noise reduction feature. Automatic AI enabled arch tracing and nerve canal mapping tool should be possible. Software provided with atleast 10 licenses & networkable throughout office, and easily integrated in a DICOM environment - PACS workflow . Airway volume analysis software (mandatory License). Even in the absence of PACS integration, software should be provided with atleast 10 full fledged licenses for different users in the dental department of the hospital to access the same patient database and use all image reviewing tools in main console computer (client-server configuration), including CBCT report generation and film printing capabilities.			
i	Technology: CBCT (Dental Volumetric Reconstruction)			
ii	Sensor Technology should be CMOS Type			
iii	Scan mode should be Continuous			
v	System should have different exposure modes available depending on the clinical requirements, resolution and patient size and be within the range of 5.5 - 40sec. or better			
vi	Voxel size should be ranging from 75 μ m - 400 μ m			
vii	Dose (Less the better) should be 4 -194 μ Sv or better			
viii	Should have atleast 3 different dose options for a single scan depending on the required resolution : High Resolution, Standard and Low Dose.			
ix	Image Acquisition 220° - 360° rotation			
x	Signal Gray Scale should be 14 bits or more			
xi	Magnification should be 1.4 or more			
xii	Should have Multi-selection FOV for small focused area, mid area and large area & Applications			
xiii	Small: 4x4, 5x5, 6x6			

xiv	Mid: 5x8, 8x5, 8x8 (both quadrants of the same side should be possible)			
xv	TMJ Assessments.: 16x6 B/L, 6x6 (U/L)			
xvi	ENT Support: All Sinuses- Frontal, maxillary, ethmoid and sphenoid; middle ear; temporal bone			
xvii	Large: 10x5, 10x10, 12x5, 12x10, 16x10, 16x12, 16x17 from 4x4 to 10x10 fov high resolution scan at less than 80microns must be possible to allow full mouth endo imaging			
xviii	Radiology mode should enable acquisition of cervico-occipital and Wrist joint in CBCT mode.			
xix	Reconstruction Time for standard 3D images should be less than 5min			
xx	3D Photo Face feature: The unit must have 3D face scanning inbuilt to scan a 3D face photo of the patient. Face scan should be possible to be superimposed with cbct data and must be an inbuilt feature from the same manufacturer			
xxi	Should have Metal Artifact Suppression feature that Reduces metal artifacts, should have the ability for users to perform live comparison of images—with and without metal artifact filters			
3.4	Cephalometric Modality: Scan Ceph Configuration with Auto Tracing as Standard			
i	Sensor Type: CMOS			
ii	Radiology Exam: Lateral, Frontal (AP/PA), Oblique, Submento-Vertex, Carpus			
iii	Acquisition format size (cm): 18x18, 18x24, 26x24			
iv	Magnification should be 1.13			
v	Exposure Time: 2.96 to 10 seconds			
vi	Gray Scale : 14 bits or more			
vii	Cephalostat unit must use horizontal scanning			
viii	There must be automatic alignment of the tube head for cephalometric imaging.			
ix	Automatic landmark tracing and cephalometry analysis should be possible : Steiner, Tweed, Rickett's etc. Automatic ceph report generation should be possible			
3.5	Digital Imaging and Treatment Software Loaded System.			
i	The PC software shall have at least but not limited to following minimum requirement:			
a	General Administration			
b	2D Digital Imaging			
c	3D Digital Imaging			
ii	The software should at minimum provide the following image acquisition modalities			
b	Panoramic imaging			
c	Cephalometric Imaging			
d	3D CBCT imaging			
e	Implantology dedicated software			
iii	The System should provide the patient management functionality such as creating and editing patient information, patient search by various filters like Patients ID, name, etc.			
iv	The System should provide following administrative functions:			
a	managing user group and access rights (limited to PC system)			
c	image template creation			
d	Managing imaging templates			

e	Assigning patients to provider (PACS)			
v	The software should have capability of automatic update & should be Integrated with implant software. In case of upgradation of this system at minimum following must be possible:			
	a) Transfer of all existing patients in database into the System. b) Transfer of all existing 2D exposures in database into the system			
vi	The system should be preferable to be installed and updated in the workstations using internet browser or like whenever an update is available.			
vii	The System should provide the following Study / Template functionality:			
a	Creating / editing study templates			
b	Image capturing directly to study templates, capture assisted by user definable templates			
c	Combining different image types to same study			
viii	The System should provide the following image viewing tools			
i	Zoom in / out			
ii	Magnifier			
iii	Flashlight			
iv	Full view			
v	Zoom to fit			
vi	Layout tool			
ix	The System should provide the following image processing tools			
	a) Preset parameters for each image type,			
	b) Brightness and contrast, Median filter, Softening filter, Sharpening filter, Emboss, Invert, Invert, Pseudo-colours, Level adjustment (Gamma curve and windowing).			
	c) Undo / Redo			
	d) Recall original image			
	e) Image transformations: mirror, horizontal mirror, rotate clockwise, rotate counter clockwise			
x	The System should provide the following measurements and drawings tools			
	a) Calibration of the image b) Measure length and angle c) Line profile measurement d) Histogram of grayscales e) Drawing: line, horizontal line, vertical line, arrow, rectangle, ellipse, text, polyline, curve f) Image comments g) Image diagnosis h) Zoom in/out i) View and navigate (move, rotate, slice) volume data j) Allow placement of implant models visible in all views for basic implant planning			
xi	The system should have software for 3D imaging program for implantology Implant simulation and implant library update, automatic Implant planning report generation, STL Converter ; Dicom Print composer,			
	System should have ability to merge STL intraoral/model scan data and CBCT dicom data , and import waxup/ place a crown for prosthetically driven implant planning			

xii	The system should have software to Support for TWAIN compatible sensors, scanners and digital camera.			
xiii	The System should provide the following views of the 3D volume data			
a	View of axial, sagittal and coronal layers			
b	Multiple Panoramic views with freely definable focal layer shape, position, and thickness			
c	Multiple Cross-sectional slice views with freely definable width, distance, and thickness			
d	Multiple Axial views			
e	3D rendered view with option to simulate solid bone surface			
3.6	The System should provide the following Printing options			
i	The dry laser printer should have double tray system.			
ii	Print editor with possibility to freely size and arrange multiple images onto a page.			
iii	Should print images from CR workstation, in DICOM 3 format. DICOM Printing, MWL, Automatic PACS transfer, Query Retrieve.			
iv	Printer should provide image depth of 14 bits or more			
v	Should have mechanism to print images to 14x17 and 8x10 film sizes simultaneously.			
vi	Should be docked in processor.			
vii	Resolution should be > 500 DPI.			
viii	Processing capacity should be more than 50 films/hour or more for 14x17 inch film size			
ix	Shall be able to switch between Receiver Mode and Processor mode.			
x	Printer should have Dry Laser Imager Technology			
3.7	Should be provided with at least two latest configuration Computer /Workstation with Ultra HD color double monitor 27" screen or more with licensed OS Windows 10 or better, latest generation i7 processor, DVD-RW, 4 TB HDD or more , 32 GB RAM and Nvidia Quadro series graphics card (4GB) , wireless printer, suitable work table & chair along with all networking, switches etc.			
3.8	Should be provided with suitable online UPS with battery and all accessories for a backup of at least 30 minutes operation of the whole unit (entire system).			
3.9	The System should provide the following measurements and view handling and management			
	· Measure length			
	· Measure angle			
	· Save view with measurements			
	· Delete view			
	· Zoom in/out			
	· View and navigate (move, rotate, slice) volume data			
	· Allow placement of implant models visible in all views for basic implant planning			
3.10	Footprint of CBCT should be preferably small			
3.11	Bidder shall provide all or any software, hardware or any tools if required during installation or during warranty free of cost. It shall provide any software or hardware up-gradation along with labor free of cost during warranty/guarantee			

5	Accessories, Spares and Consumables			
5.1	The Supplier should provide following accessories & all : · Acquisition WS, Review WS, Calibration tool kit etc.			
	· Should provide a suitable UPS with maintenance free battery for at least 30 minutes backup.			
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	Standards & Safety Requirements			
6.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND			
6.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			
6.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item no. 7

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
G	3D Printer			
	Manufacturer Brand			
	Brand			
	Type / Model-			
	Country of Origin-			
1	Description of Function			
1.1	DLP Dental 3D printing is the use of additive manufacturing to create dental parts such as aligners, dentures, crowns etc. To create custom parts that match a patient's anatomy			
2	Operational Requirements			
2.1	The system must be DLP precise, reliability , speed and an open material system all comes as standards to provide production continuity for the most demanding digital manufacturing dental CAD custom parts that must match a patient's anatomy.			
3	System Configuration			
3.1	3D Printer with complete accessories.			
4	Technical Specifications			
4.1	The system must be table top wireless and wired connection having cutting edge system positioning technology feature for optimized part placement and curing consistency.			
4.2	The system should have simple platform calibration and internal radiometer for automatic ultra-precise LED calibration.			
4.3	The system must be open material system where user can use any suitable third party material for print including biocompatible options.			
4.4	The system must come with composer software no any subscription charges with life time free updates and technical support included.			
4.5	The system should have automated internal calibration and real time monitoring to ensure print consistency and accuracy			

4.6	The system must be integrated with leading 3D scanning and digital design software available.			
4.7	The system must be ultra-compact design suitable for dental clinics, small labs and chair side.			
4.8	The system must be compatible with CAD.			
4.9	The system must have HD print resolution of 62µm pixel or more.			
4.10	The system must have integrated, optimized build platform for quick and easy model removal with build volume of 119 x 67 x 75mm or better.			
4.11	The system should have 385nm or better wavelength UV LED light source.			
4.12	The system software must be compatible with STL,SLC,PLY,STM file formats.			
4.13	The system should have adjustable layer thickness from 10 -100µ, offering fine details.			
4.14	The system must have variable print speed based on layer thickness and resin type, around 60 mm/hr or less.			
4.15	The system should have minimum 10" or more color touchscreen with intuitive user interface for control and monitoring.			
4.16	The system must be produce dental models, surgical guide, denture base, temporaries, partial frameworks, crown & bridges and custom trays.			
4.17	The system should manage multiple builds at the same time.			
4.18	The system should be enclosed with UV filtering for safe operation			
4.19	The system must have smart positioning system.			
5	Accessories, Spares and Consumables			
5.1	The Supplier should provide following accessories: Operating Computer/Laptop, printing material 1 pack, Built tray 2 pcs, Post curing chamber-1 set, Calibration tool kit, 1jar each of resin used			
5.2	Should provide a suitable UPS with maintenance free battery of 30 minutes backup.			
5.3	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	Standards and Safety Requirements			
6.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
6.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			
6.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item No. 8

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
H	Dental Microscope			
	Manufacturer Brand			
	Brand			
	Type / Model-			
	Country of Origin-			
1	Description of Function Dental microscope for crystal clear visualization in dentistry in a compact, ergonomic design.			
2	System Configuration			
2.1	Dental operating microscope with complete accessories.			
3	Technical Specification			
3.1	The system should give users 360 degrees of freedom in positioning the microscope. A highly responsive apochromatic optical system ensures ease in landing on the ideal magnification.			
3.20	The eye pieces should be wide field 10X / 18mm with foldable eyeguards, focusable for Dioptric adjustment			
3.3	IPD adjustment should be approx. 50-75mm			
3.4	Dental Operating Microscope with 0-210° or more tiltable binocular tube with additional tilt of 20° or more on left and right side			
3.5	Objective with Variable working distance from 200-400 mm without change of objectives and with fine focus mechanism			
3.6	The system consist of basis microscope body with 5-step magnification changer, 0.4X , 0.6X, 1.0X, 1.6X AND 2.5X			
3.7	It should have Inclined Double Beam Splitter better posture and neck comfort and beam splitter should be provided with Camera Adaptor and HD Camera			
3.8	It should have Double Iris Diaphragm for better documentation quality			
3.9	It should have Diopter adjustment with ± 8 mm with diopter lock mechanism			
4.00	It should have built in filter of Yellow, Green, Ultra Blue,			
4.10	It should have sturdy floor and sleek desined stand mount with H base design (580mmx560mm) and 4 easily ground cleared moveable castros for flexible use in several treatment rooms.			
4.12	Should have cold light illumination by fiber optic light guide which must be spiral covered for long life. The light source must be LED system with 180,000 Lux value. Thermostatically Controlled cooling fan should be provided. The fiber optic cable should spiral type in high quality material with metallic end point			
4.13	It should have 50watt LED illumination reliable light source integrated inside the Arm of the floor stand.			
4.14	Microscope arm should have power saving feature with light cut-off in park position			
4.15	Should have swivel arm and suspension Arm with movement locking knob.			
4.16	Vertical movement of the arm should be 550 mm			
4.17	The workable vertical of the microscope should be 1146 to 1466			
4.18	The arm reach must be more than 1125 mm			
4.19	The microscope head should be able to incline 90 degree			

4.20	Should have Microscope Carriers 120°			
4.21	The microscope head should have handle to maneuver the microscope			
5.00	Accessories, spares and consumbles			
5.10	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and iubrication materials, to e included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6.0	Standards and safety requirements			
6.1	Must submit ISO13485:2003/AC:2007 for medical devices AND			
6.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			
6.3	Shall meet IEC-60601-1-2:2001 General requirements of safety for electromagnetic compatibility or must comply with 89/366/EEC; EMC Directive.			
6.4	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for electrical safety of Medical equipment.			

Item No. 9

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
I	Dental Operating Microscope			
	Manufacturer Brand			
	Brand			
	Type / Model-			
	Country of Origin-			
	Description of Function:			
1	Dental microscope for crystal clear visualization in dentistry in a compact, ergonomic design with imaging system			
2	System Configuration			
2.1	Dental operating microscope with complete accessories (camera, stereoscopic observer, monitor)			
3	Technical Specification			
3.1	The system should give users 360 degrees of freedom in positioning the microscope carrier. A highly responsive apochromatic zoom system ensures ease in landing on the ideal magnification.			
3.2	Optics must be Apochromatic with special coating with color correction for three wavelengths			
3.3	Dental Operating Microscope with 0-210° tiltable binocular head			
3.4	IPD adjustment should be approx. 50-75MM			
3.5	WF 10X /18 mm lockable eyepieces of which one with resolution markup to assist in diopter adjustment, optional - 12.5X/18.0			
3.6	It should have Diopter adjustment with ± 7mm with diopter lock mechanism. It should be upgradable if needed.			
3.7	Galilean Zoom 1:6 convertible to 8 step magnichanger			

3.8	It should have Inclined Double Beam Splitter for better posture and neck comfort and beam splitter should be provided with Camera Adaptor and HD Camera along with Assistant Binoculars tiltable 0-210° or more			
3.9	It should have Double Iris Diaphragm for better documentation quality			
4.0	Objective with Variable working distance from 200-400 mm without change of objectives and with fine focus mechanism with a field of view of 1-13mm			
4.1	Microscope carrier arm movement with electromagnetic release for easy, drift free positioning of microscope carrier			
4.1	Microscope arm should have power saving feature with light cut-off in park position			
4.1	It should have built in filter of Yellow, Green, Ultra Blue, Polarising			
4.1	Microscope must be provided with assistant co-observation with articulations for 360° rotation and tilt provision with Binocular head (Tiltable)			
4.1	It should have sturdy floor and sleek desined stand mount with Cross base design (850mmx850mm) and 4 easily ground cleared moveable castros for flexible use in several treatment rooms.			
4.2	Light Source 50 Watt LED, 100-240V			
	Light intensity 180000 lux approx and 60000hrs life			
	Color temperature 6500k			
4.2	Maximum Wattage 195-200 watts			
4.2	Vertical Movement of Arm ± 250 mm, power saving feature with light cut-off in park position Automatic Balancing Arm with electromagnetic brake for free positioning			
4.2	Mounting Options Floor/wall mount or ceiling mount			
4.16	Vertical movement of the arm should be ± 250mm			
4.2	The workable vertical of the microscope should be 1065-1590mm			
4.18	The arm reach must be more than 1220mm			
4.21	The microscope head should have handle to maneuver the microscope			
4.2	It should have of Camera Attachment for documentation (still imaging and recording) attached with TV for live display.			
	Sensor 1/2.8" 6 mega pizels CMOS			
	active area is 5.7 mm x 4.28mm			
	Pixel Size 2.7 x 2.7 microns			
	Frame rate 30fps			
	Sensor resolution Dynamic 1920x1080 pixels			
	Dynamic Range 65DB			
	Interface USB 3.0/HDMI/SD/Mouse control			
	Optical Connection C Mount			
	Measurements geometric & axial			
4.2	It should have dust cover for protecting the microscope from dust and dirt.			
4.21	Monitor 24" for visualization			
5	Standards and Safety Requirements			
5.1	Must submit ISO13485:2003/AC:2007 for medical devices AND			
5.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			

5.3	Shall meet IEC 60601- 2-2 medical electrical equipment part 2-2: particular requirement for the safety of high frequency surgical equipment			
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Item No. 10

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
J	HIGH END 3D INTRAORAL SCANNER			
	Manufacturer Brand:			
	Brand:			
	Type / Model:			
	Country of Origin:			
1	Description of Functions			
1.1	Intraoral scanner is hand held device for capturing direct 3D Digital impression in dentistry. The dentist can view the real-time 3D images on the computer, which can be magnified and manipulated to enhance details. The data will be transmitted to dental labs to fabricate any needed appliances.			
2	Operational Requirements			
2.1	The device provides accurate details of the hard and soft tissues located in the oral area through high-quality 3D model processed by the scanning software will be displayed in real-time on multi-touch screen integrated high performance computer designed for easy movement between treatment rooms.			
3	System Configuration			
3.1	The system must be wireless hand held pen design easy to operate ,capable of measuring shades of teeth and adding HD photos to the 3D model.			
3.2	The scanner must have built-in anti-fogging system (internal heating system for fog removal) for continuous scanning.			
3.3	The system must have color calibration tip			
3.4	The scanner must have 5 tips and a protection tip,tips must be detachable and autoclavable at least 100 times.			
3.5	The scanner must have LED light source without radiation, having real colour scans and real time imaging.			
3.6	The scanner system must be open system,scanning data must be compatible with any dental designing software.			
3.7	The scanner system should having high speed scanning with enhance AI-driven image processing & AI-recognition which effectively remove any unwanted scan data.			
3.8	The scanner must be able to scan both- dynamic & static bite			
3.9	The scanner software must have model builder feature.			
3.10	Intra oral scanner with complete accessories including scanning software , Cart solutions and designing software .			
3.11	the scanner software must contain patient engagement apps- smile design, patient monitoring, treatment simulator			
3.12	The scanner must come with a well integrated in house aligner manufacturing software.			

3.13	The scanner software must come with analysis tools for checking clearance, undercuts, marking margins etc.			
3.14	The scanner software must have a caries detection tool for surface caries.			
3.15	The scanner must be calibration free			
4	Technical Specifications			
4.1	The system based on 3D Light Scanning Technology			
4.2	The system must have wireless 3D scanning with ultrafast optical sectioning techology for powder free intraoral scanning in colours.			
4.3	The system should have scanning resolution of approx.100 microns or better for full arch scans			
4.4	The system should have accuracy of <100 microns or better for full arch & <20 microns or better for single tooth			
4.5	The system must have scanning distance indication feature with scanning speed of <60 sec or better for full-arc & <20 sec or better for single tooth.			
4.6	The system must have file export feature Including STL,PLY and DCM			
4.7	The system must have 5GHz wireless connection link using dedicate access point.			
4.8	The system must have wireless range of atleast 5meter in same room.			
4.9	The system should have 60 min. or more battaery back up			
4.10	The system must have extra battaery with charging dock , minimal battery charging time.			
4.11	Battery life must be 300 scanning cycel or better			
4.12	The system must have scan activation button for easy operation during sacnning and a remote control button to prevent contamination.			
4.13	The syetem must support implants, inlays,onlays, orthodontics,post & core,crown, bridge and veneers.			
4.14	The system must have self-calibrating technology ensures consistent accuracy			
4.15	The system should provide tactile feedback for user guidance during scanning.			
4.16	The system must be compatible with the CAD/CAM software			
4.17	The system must be capable of single tooth quadrant and full arch impression.			
4.18	The system should be sleek, compact , light weight & having ergonomic tip for patient comfort.			
5	Accessories, spares and consumables			
	Accessories:			
5.1	Operating Computer/Laptop (as per specs below) should be provide from Intra oral scanner manufacturing company.			
	Dell Precision Workstation 16 (7680) or equivalent			
	Display: 16-inch, UHD+ 3840x2400 OLED Touch			
	Processor: 13th Gen Intel® Core™ i7-13850X			
	Memory: 32GB GDDR6			
	Disk: 1TB SSD			
	Graphics card: NVIDIA RTX 3500 Ada Generation, 12 GB GDDR6			
	Keyboard: Regional			
	Operating system: Windows 11 Pro			

	Camera: FHD/IR camera with built-in microphone and speakers			
5.2	Scanner Wand , Scanner Pod, Sleeves (2 box) , Autoclavable tips - 2 tips, ready & protection tips - 2pcs. Each, Battery Pack-2 set, wireless charging dock, wi-fi dongle for PC/Laptop, Software, Calibration Tool, Service pack etc.			
6	The system software should be regularly updated with new features and improvements & should be free of cost , no extra hidden charges during the warranty period.			
7	Should provide a suitable UPS with maintenance free battery of 30 minutes or more backup.			
8	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
9	Standards and Safety Requirements			
9.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND			
9.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			

Item No. 11

S.N.	Purchaser's Specifications	Bidder 's offer	Catalogue / Brochure Page No:	Bidder Remarks
K	5 Axis Milling Machine (CAD CAM Set)			
a	CAD CAM SETUP			
	Manufacturer Brand:			
	Brand:			
	Type / Model:			
	Country of Origin:			
1	Description of function			
1.1	Millable materials: Zirconia, PMMA, HPP, PEEK, Wax resin, Titanium Disc, Glass Ceramic, Denture, Premill, Nanocomposite			
1.2	Millable restoration: Denture, bitesplint, snap on smile, surgical guide, partial framework, crown and bridge, veneer, inlay, post and core, screw-retained bridge, custom abutment, denture with gums			
2	Operational requirement			
2.1	Air compressor, voltage stabilizer, Suction, LAN connection, Water tank, Work table			
3	Milling Machine System Configuration			
3.1	Number of axis: 5-axis simultaneous processing CNC milling machine			
3.2	Milling Mode: Capable of both Wet and Dry to accommodate various materials			
3.3	Spindle Speed : 60,000 RPM or higher for high speed milling for high performance spindle & enhanced precision, Power of the machine 2.2kw & 10A			

3.4	Milling Accuracy : ± 5 microns or better ensuring high accuracy for dental restorations.			
3.5	Axis Movement: Simultaneous 5-axis machining with a 360° rotation and $\pm 30^\circ$ or more tilt capability for complex geometrics (A/B axis) & Linear movement (X,Y,Z axis)			
3.6	Spindle Power : < 1.5 KW (wet and dry milling)			
	Chuck size must be 98-110mm			
3.7	Tool Changing System : Automatic tool changer with 10 or more tool capacity, allowing for various operations without interruption.			
3.8	Processing Time : Fast milling speeds designed to complete standard sized crown milling within 15 minutes or less and full denture in less than 3hr, Premill less than 20min, glass ceramic less than 20min			
3.9	Drive Mechanism : Ball Screw			
3.10	Tool Shank Diameter: 4-6mm			
3.11	Way System : Linear Guide			
3.12	Cooling System : Water Cooling system with filtration system for lubricating and cooling the milling tools and materials, reducing wear and preventing overheating for wet milling			
3.13	Air Pressure should be around 6 - 8bar from a suitable capacity, silent, oil free air compressor with filters for clean, dry air maintaining tool life ensuring contamination free milling.			
3.14	The Milling machine should have a suitable suction unit/system for the removal of debris & dust generated milling process, generally dry milling.			
3.15	The Milling machine should be able to mill disc 10-35MM (round disc)			
3.16	The Milling machine should be compatible with laboratory scanner.			
3.17	Pre-programmed settings for milling specific materials to streamline operation			
3.18	The milling machine should have Auto Calibration Function for best, easy and precise machine set up. In particular with auto calibration by the location of pre-milled blank, one can produce high accuracy customized abutment.			
3.19	Tool Life Monitoring : Integrated tool life monitoring system			
3.20	Display: Intuitive touchscreen interface with graphical control for easy operation			
3.21	The milling machine should be latest, compact design, sturdy and include licensed software.			
3.22	User friendly CAM software included with regular software updates, optimized for dental applications.			
3.23	The milling machine should be fully compatible with CAD systems, including open-file formats like STL, PLY and OBJ for import of other files scanning data.			
3.24	Compatible with major 3D introral and lab scanners for seamless workflow.			
3.25	Accessories: Disk Cartridge C type, AT Holder A/B, Attachment, AT Cartridge, CAD Block Cartridge, Spindle etc.			
3.26	Change Over from Dry to Wet & Wet to Dry, manually switch between the suction port and the water return port			

3.27	The milling machine should be able to mill materials from all Branded companies like Sirona, GC, Vita, Ivoclar Vivadent, 3M, DENTSPLY, and other thirds party material manufactures.			
3.28	The milling machine should have unique color coding for burs for easier identification and co-relation with material used.			
3.29	The milling machine should have a multi- block holder to accommodate 3 blocks of various materials or 2 premills atleast thereby enabling maximum productivity.			
3.30	Milling machine must include work table, water cooler and water tank as a complete set			
3.31	The milling machine should have a wide spectrum of indications changing from disc to blocks in just few minutes.			
3.32	The milling machine should be able have tool management for complete control over the state of maintenance of production unit.			
3.33	The milling machine should have the cam software for automatic size detection of the restorations for positioning, height optimization in the disc for calculation.			
3.34	The machine should be able to create, load and manage orders and materials in the form of discs and blocks.			
3.35	the system should have positioning accuracy of +/- 5microns			
3.36	System should be able to mill one piece digital dentures which			
3.37	Control system must be AC Bus servo motor, Embedded CNC system			
3.38	Power Supply ; 220-240VAC, 50Hz.			
3.39	Noise Level : <65dB(A)			
4	Accessories, spares and consumables			
4.1	The Supplier should provide following accessories: Operating Computer/Laptop with Licensed OS Windows 11 Pro, MacBook			
4.2	Should provide a suitable UPS with maintenance free battery of 30 minutes backup for CAM PC			
4.3	PC REQUIREMENTS			
4.4	system: Win 11 Pro 64bit/Win11 Pro 64 bit			
4.5	CPU 12th Gen Intel(R) Core(TM) i7-12700H 2.70 GHz or higher			
4.6	Ram 32GB or above			
4.7	Graphics RTX 3060 8GB or higher			
4.8	USB Including 2 or more 3.0 interfaces			
4.9	SSD 1TB or above			
5	The system software should be regularly udated with new features and improvements & should be free of cost , no extra hidden chargs.			
6	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
7	Standards and Safety Requirements			
7.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
7.2	CE (93/42 EEC Directives) and USFDA approved product certificate.			
7.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item No. 12

L	CAD MACHINE			
	Manufacturer:-			
	Brand:-			
	Type / Model:-			
	Country of Origin:			
1	Description of function			
1.1	It scans prosthesis site and design the prosthesis.			
2	Operational requirement			
2.1	Requirements for each units are described in following sections			
3	System configuration			
3.1	Extra oral laboratory scanner, software,			
4	Extra oral laboratory scanner			
4.1	The Laboratory scanner should be 5 axis scanning.			
4.2	The Laboratory scanner should have Robotic arm scanning technology.			
4.3	The scanner should be able to scan all indications for every digitalization task.			
4.4	The scanner should be fully automatic.			
4.5	The scanner should be able to scan whole model jaw overview in less than 60 seconds using the large scanning field.			
4.6	The scanner should be able to scan automatic and manual.			
4.7	The scanner should have a blue light while scanning.			
4.8	The scanner should be an open scanner			
4.9	The scanning technique should be digital stripe light projection.			
4.10	The scanner should be STL open.			
4.11	The model data collected can be exported as STL.			
4.12	The scanner should be able to scan all types of models.			
4.13	The scanner should also be able to scan rubber base impressions.			
4.14	The scanner should hold various shapes and sizes of impression trays with no difficulty.			
4.15	The scanner should have ample space for placing all company articulator – non/semi/fully adjustable.			
4.16	The scanner should be able to scan single dies.			
4.17	The scanner should have multi-die scanning and be inserted into the digital model with no manual interaction.			
4.18	There should be a texture scan for better cast partial denture designing in software.			
4.19	The scanner should be able to scan for the purpose of custom abutments and implant prosthesis.			
4.20	The scanner should have an accuracy of <8 microns			
4.21	Machine should be ECE & USFDA certified			
5	Software			
5.1	The Software should be user friendly			
5.2	There should be two software's CAD and CAM			
5.3	The CAD software should be for designing and CAM software should be for milling (manufacturing).			
5.4	The software should enable the user to design all indications such as inlays, onlays, crowns, bridges, custom abutments, framework, full mouth cases, surgical guides, veneers, bars, attachments.			

5.5	The software should have virtual articulation, smile design.			
5.6	The software should allow Automatic, Manual Margins detection.			
5.7	The software should have a lot of tools to design.			
5.8	The software should have dental database.			
5.9	The software should have virtual insertion.			
5.10	The software should have gingival elements.			
5.11	The software should be able to export/import model and design from other units.			
	The software should be able to design partial denture frameworks which can be exported as STL file.			
5.12	The software must be licensed & must have all free updates during warranty. Incase of any issue with the software during warranty period the bidder shall avail & upload the software at its own cost, no hidden charges.			
6	Accessories: Operating Computer/Laptop (as per specs below) should be provide from manufacturing company & Articulator Holder			
6.1	Display: 1920 x 1080 resolution minimum Monitor size 24"			
6.2	CPU: 12th Gen Intel(R) Core(TM) i7-12700H 2.70 GHz or higher			
6.3	Memory: 64GB RAM			
6.4	Disk: 1TB M.2 2280 PCIe® SSD			
6.5	Graphics Card: NVIDIA RTX A2000 6GB or higher			
6.6	Operating system: Windows 11 Pro			
6.7	Keyboard: Regional, depending on availability			
6.8	Mouse : Included			
6.9	USB Including 2 or more 3.0 interfaces			
7	Standards and Safety Requirements			
7.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
7.2	CE (93/42 EEC Directives) & USFDA approved product certificate.			
7.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item No. 13

M	CAM Extraction Machine			
	Manufacturer:-			
	Brand:-			
	Type / Model:-			
	Country of Origin:			
1	Description of function			
1.1	High Vacuum Silent Extraction unit for CAM system			
2	Operational requirement			
2.1	Compact, Space-Saving Design, Light Weight, Dry Extraction Unit compatible with CAD/CAM milling machine & suitable to install near it.			
3.0	System configuration			
3.1	The unit must be Compact, bag-free extraction unit for use with compact, dental CAM units			
3.2	Unit should have Bi-directional communication between extraction unit and CAM unit via PLC interface.			

3.3	Must have longer service life in comparison to conventional collector motors & must guarantee atleast 1000 operating hours			
3.4	It should have suction power approx.160m ³ /hr or more			
3.5	Motor change must be simple and should be easily done , also easy access filters & low maintenance.			
3.6	Power consumption <500Watts			
3.7	Maximum volume flow must be 2500l/min or more			
3.8	Max depression should be 219hPa or 3.2psi			
3.9	Motor technology must be collector type			
3.10	Filter technology must be bag free type			
3.11	Filter quality must be Class M according to EN 60335-2-69			
3.12	Working voltage 220-240v & Frequency 50-60Hz			
3.13	CAM Interface : RJ 45 socket type			
3.14	Filtration System : Multi stage with HEFA filters			
3.15	Low Operating Noise : <50dB(A)			
3.16	Accessories :			
	Suction Hose, Universal Adapter for Suction Hose, Adapter for Hose Connector, 90° Angle Connector, End Bushing Set, Silencer, Fine Filter, Interface Cable , Exhaust Air Adaptor etc.			
3.17	All standard accessories, consumables and parts required to operate the unit, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
4	Standards and Safety Requirements			
4.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
4.2	CE (93/42 EEC Directives) and USFDA approved product certificate.			
4.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Item No. 14

N	Sintering Machine			
	Manufacturer:-			
	Brand:-			
	Type / Model:-			
	Country of Origin:			
1	Description of function			
1.1	The sintering oven is a high-temperature oven for commercial use in dental laboratories and may only be used for sintering sinterable ceramics.High Speed & classic sintering for all types of standard Zirconia ceramics			
2	Operational Requirement			
2.1	High Speed & Regular Sintering for all types of Zirconia Ceramics			
3	Technical Specifications			
3.1	The sintering furnace should be able to sinter all types of zirconia ceramics			
3.2	The sintering furnace should have option for both regular & speed sintering			

3.3	The sintering furnace should have different programs depending on material. Users should be able to program their own cycle, if required.			
3.4	The sintering furnace should be able to sinter all types of Zirconia- normal, translucent and colored.			
3.5	Heating Element : 6 x MoSi2 elements			
3.6	Maximum Temperature : 1600°C or more			
3.7	Temperature Accuracy @ 1500°C : ±3°C			
3.8	Maximum Heat Rate : 99°C/min.			
3.9	Minimum Heat Rate : 1°C/min.			
3.10	Thermocouple : PtRh-Pt			
	The unit must be made of high purity molybdenum disilicate heating elements from the semi conductor segment			
3.11	Heating Chamber Capacity : 3 x 120/30 mm sintering trays or better			
3.12	Process Duration : 2.5 hrs. or less for Regular & 1.5 hrs. or less for Speed			
3.13	Maximum Programmable Heating Rate : 30°C/min for Regular & 99°C/min for Speed			
3.14	Shortest Heating Period to 1500°C @230V : 50 min. or less for Regular & 30 min. or less for Speed			
3.15	Shortest Cooling Period : 70 min. or less (down to 300°C) for Regular & 20 min. or less (down to 750°C)			
4.0	Program Control :			
4.1	Should have LCD Display			
4.2	Should have 4 programmable heating stages			
4.3	Should have atleast 30 or more pre-programmed capacity & 3 or more service program capacity.			
4.4	Should have service programs like temperature control, heating chamber purging, regenerate heating system etc.			
4.5	Should have functions for pre-drying, ventilated heating , timer			
4.6	Should have drying programs for wet milled restorations			
4.7	Heating Chamber Height not less than 100mm			
4.8	Maximum Power : < 4KW			
4.9	Should have RS 232 interface to record real time program data for analysis /compliance			
4.10	Number of Denture that can be sintered upto 90 or more			
4.11	Sintering should not case any damage to the zirconia material			
4.12	A thermocouple fail-safe prevents the sintering oven from overheating if the temperature sensor becomes defective.			
4.13	Power Supply : 220-240VAC, 50Hz.			
5	Accessories			
5.1	Stacking Disc			
5.2	Sintering Tray Speed			
5.3	Sintering Granulate & Rucible Tongs			
6	Accessories, spares and consumables			
6.1	All standard accessories, consumables and parts required to operate the equipment, lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
7	Standards and Safety Requirements			
7.1	Must submit IS013485:2003/AC:2007 for Medical Devices & ISO 12100:2010			

7.2	EC Declaration of Conformity according to Machinery Directive 2006/42/EC			
7.3	US FDA registered or approved certificate			
7.4	Electrical safety conforms to standards for electrical safety IEC-61010/61326			
7.5	Protection Class must be IP 20			

Item No. 15

O	Dental compressor 3 HP CAD CAM			
Manufacturer				
Brand				
Type / Model				
Country of Origin				
1	Description of Function			
1.1	Oil Free dry air compressor provides positive airway pressure to operate a 5 axis dental milling machine with digital display control panel			
2	Operational Requirements			
2.1	Should be able to provide required air pressure for operating a 5 axis Hybrid Milling machine			
3	System Configuration			
3.1	Oil-free Medical Grade Air Compressor 3 HP with membrane dryer			
4	Technical Specifications			
4.1	Should be of medical grade, Oil free, noise Free (Sound proof noise level less than 70dB.)			
4.2	Compressor must have oilless piston for high efficiency, low dissipation			
4.3	Should automatically control the ON/OFF of each motor according to the whole workload (both overvoltage and undervoltage protection)			
4.4	Must have Membrane dryer with filters			
4.5	The system must have three grade filtration (3micron+1micron+0.01micron)			
4.6	Water Oil and particulate matter in the compressed air must be filtrated upto 0.01 micron			
4.7	Lower dew point temperature for better filtration 0°C to -40°C			
4.8	Connectors and other accessories required for functioning should be provided by supplier.			
4.9	Dust filter and microbial filter fitted on epoxy coated antimicrobial tank			
4.10	Should have anti-corrosive & derusting coating and oil-free inner pot coating.			
4.11	Tank capacity should be within the range of atleast 70 ltrs. or more			
4.12	System must have intelligent control panel visualization data display			
4.13	Must display current, voltage, pressure, errors etc.			
4.14	Maximum airflow should be around 470-480l/min or more			
4.15	0.5MPA airflow should be around 300-315ltrs/min or more			
4.16	Noise : < 75dB(A)			
4.17	Power 2.25kW or less			

4.18	Power Supply : 220-240VAC, 50Hz.			
5	Accessories, spares and consumables			
5.1	All standard accessories, consumables and parts required to operate the equipment, lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	Standards and Safety Requirements			
6.1	Must submit IS013485:2003/AC:2007 for Medical Devices AND			
6.2	CE (93/42 EEC Directives) and/or USFDA approved product certificate.			
6.3	Electrical safety conforms to standards for electrical safety IEC-60601.			

Terms and Conditions that shall be part of technical specification and turnkey project.

- 1 The bidder must provide Comprehensive Warranty for 2 years from the acceptance and successful handover and another 1 year of free Service Warranty. During comprehensive warranty company shall station its trained service personnel at site for day to day troubleshoot and repair/maintenance, mandatory.
- 2 During the warranty period supplier must periodic planned preventive maintenance and ensure corrective/breakdown maintenance whenever required.
- 3 The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel on turnkey basis; any prerequisites for installation to be communicated to the purchaser in advance, in detail. Subsequent to Installation, Official Trained Technical Personnel will have to be available and stationed on all working days to fix day to day problems inclusive of wear and tear during warranty and CMC periods by the bidder.
- 4 Site will be provided by hospital. Site visit prior to installation should be done by the bidders or in cooperation with hospital management. Mode of handover- Turn key module.
- 5 Application expert must be available until familiarization of the system and regular follow up as required.
- 6 The machine supplied should be brand new with the date of manufacture mentioned and the country of origin should be clearly mentioned
- 7 The supplier should fill the technical tender form and clearly mention the date of manufacturer, model no. and country of origin/Made in, else technically will be disqualified.
- 8 The bidder must submit a valid authorization from the manufacturer.
- 9 Should have at least 2 installation of inside the country and user satisfactory letter should be attached.
- 10 Must submit the original brochure/catalogue/supporting documents with tender documents.
- 11 The product offered should be designed to be stored and operate normally under the condition of purchaser country (Electrical & Environmental Conditions)
- 12 All software license must be permanent and if reinstallation of software is required it must be free of cost during warranty and CMC period. Also all software upgradation must be free of cost during CMC and warranty period.
- 13 Commitment letter from the bidder as well as from the manufacturer regarding the availability of letter of spare parts, accessories, any consumables and service support for minimum 10 years from the date of installation.
- 14 Extensive Repair & Maintenance training to the Hospital's Electro-Biomedical Section Staff's and operational & user training to End Users at site.

16 The bidder must quote the rate of Comprehensive Maintenance Contract which shall be applicable after
warranty period and must not exceed beyond 5% of the bid amount (excluding tax) and has to recruit its trained
technical personnel @ site during CMC.

17 The bidder must quote the rate of Annual Maintenance Contract which shall be applicable after warranty period
and shall not exceed beyond 2.5% of the bid amount (excluding tax) and has to recruit its trained technical
personnel @ site during AMC.

18 Institute shall only provide the site for installation and all aspect of civil, electrical, biomedical and computer
engineering works must be done by bidder under turnkey basis.

