

OUTCOME OF PRE-BID MEETING HELD ON 23.06.2016 at 3.30 PM
AGAINST
TENDER NOTICE NO. 04/2016-17/ CSSD/ Biomedical Equipment/IGIMS/ Store

GROUP- A- (CSSD)

Various point related to specifications and amendments made after previous two pre-bid meeting held against earlier two tender notices, terms and conditions were discussed. After discussion, it was decided to upload the amended specifications as mentioned below. Bidders are requested to submit their quote accordingly.

SCHEDULE-2

SCHEDULE OF REQUIREMENT

Tender Identification	Description of the Work	Tender Fee	EMD (Bid Security)
C.S.S.D.- Turnkey	<p>a. Supply, installation and commissioning of following CSSD Equipments:</p> <p>i. Washer Disinfector with Dryer (Capacity: 250 to 300Ltrs.) –1 No. ii. Ultrasonic Cleaner (Capacity: 20Ltrs.)–1 No. iii. Double Door Steam Sterilizer (Capacity: 900 to1000Ltrs.) –1 No. iv. Horizontal Steam Sterilizer (Capacity: 200 to250Ltrs.) –1 No.</p> <p>b. Supply of supporting Instruments/Accessories</p> <p>i. Heat Sealing Machine –2 Nos. ii. Closed Transport Trolley–4Nos. iii. Instrument Trayofvariousizes–40Nos. iv. ModularWireBaskets–50Nos. v. SS Lid for Modular Wire Baskets –50Nos. vi. Storage Racks –10 Nos. vii. Wash Station with Two Sinks–1Set viii. Water Treatment Plant (Capacity: 1000 Ltrs. Per Hour)–1 No. ix. PassBox–2Nos. x. Height-Adjustable Packing Table – 2Nos. xi. Partition made by 304G steal with 0.2mm thickness duly supported by stainless back frame, for providing strength to partition, and to be fabricated and install at site between sterile area and clean area, total area approx.---- sterilizer primary inlet door and secondary door. Vender should visit site and inspect before quote their rate, rate should be mention as per square ft. Bidder are also required to fabricate and kept provision for door.</p> <p>c. Details of Civil Works:</p> <p>i. Providing and fixing Ceramic glazed wall tiles (Somany / Klajaria / NTC– Make or equivalent standard make) 300 x 200 mm size on the base of 12 mm thick cement mortar (1:3) after demolishing old plaster all complete with all taxes as per specification and direction of user : Rate:_____/Sq. Meter. ii. Provision of R. O. Water supply and storage facility (Water Tank of atleast 1000 Liters; Qty .–02Nos. of standard make), plumbing work and other associated civil work. iii. Fabrication of bricks partion wall with plaster with provision of drainage system. iv. To provide false ceiling with LED Lights of complete area. v. Renovation of existing Window by closing the same by a glass supported by aluminium frame. vi. Anti bacterial paint of the complete area.</p>		

	<p>d. Details of Electrical Works:</p> <p>i. Installation of Electrical Panel of 200A with provisions of Main Switches at various places required for operation of equipments. Four nos. of outlets with Main Switch of 63 A (ISI; Havels / L&T etc.) are to be provided for use with equipments. Apart from above, suitable quantity (atleast 5nos.) 5A / 15A power sockets are to be provided inside the space. General lightning (Tube / CFL & Fan) and ventilation (Suitable Exhaust Fan) are to be also provided.</p> <p>ii. Supply, installation and commissioning of 5nos. of 2.0 Tr. Split Air-Conditioning System in sterilization and non-sterilization area.</p>		
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Note:-

1. The quantity mentioned is only the tentative requirement and may increase or decrease as per the decision of Tender Inviting Authority. The rates quoted should not vary with the quantum of the order or the destination.
2. The Tender Inviting Authority shall have the right to approve the price of individual major equipment item wise in addition to the turn-key amount offered by the selected bidder.

SCHEDULE-3

DETAIL TECHNICAL SPECIFICATIONS OF C.S.S.D. EQUIPMENTS

A. DECONTAMINATION

1. Washer Disinfector with Dryer

Item Description	Size	Qty.
Washer Disinfector with Dryer	250 to 300 L (Two Door)	01

Required Specifications

1. **Chamber Capacity:** Operational Volume should be up to 250 – 300 (15-18 din) Lit. The chamber should be made of S.S. 304/316 quality with electro polished washed surfaces. The chamber edges should not have pockets & folds so as to avoid bacterial growth. The wash chamber should also be fitted with bright light for clear visibility of the washing process.
2. **Chamber construction:** Chamber should be made of S.S.304/316 quality.
3. **Standards & Norms: US FDA Certified** and process should be validated in accordance with EN ISO 15883.
4. **Washer should have following features:**
 - Should be equipped with process tank, booster tank and drain tank.
 - Washer Disinfector should have cycle phases like Pre Wash, Main Wash, Rinse, Thermal Rinse (disinfection), HEPA filtered drying.
 - For shortest possible filling and draining phases, higher capacity quick opening valves should be used so that short total process time is achieved. The design should focus on saving the environment through reduced consumptions of all utilities.
 - Cleansable spray arms should be located at the top and bottom of the chamber.
 - Wash carts should be equipped with cleansable spray arms between each shelf so as to facilitate water to reach all the surfaces which needs to be cleaned.
 - Injection wash carts should be automatically connect to water and drying air in order to clean and dry the inside of the tubular instrument.
 - Washer should be supplied with minimum 3 dosing pumps for dispensing detergents and lubricants.
 - Out of three dosing pumps, minimum 2 dosing pumps should have flow meters for liquid control.
 - Washer should have inbuilt foam control alarm to avoid excessive foaming during the wash cycle.
 - Washer should be provided with circulation pump with min 3HP capacity motor with minimum 20-22 psi at pump outlet to achieve effective cleaning.
 - Washer should have inbuilt heating elements for hot water supply. It should have adequate capacity to heat the water (Approx 12-16 KW heating elements).
 - Washer should have inbuilt drier & the drying air should be pre-filtered with HEPA (H13) filters.
 - The washer should have min 5” or more colour display touch screen on loading side and equipped with independent temperature monitoring and validation test port according to the latest international standards.
 - Washer should have complete microprocessor controlled operations with features like; locking cycle parameters with access code, Service mode for preventive maintenance testing and to facilitate trouble shooting, Built-in service diagnostic program to permit system calibration and verification of component

operations, Security lock-out feature that enables programs and temperatures to be locked and unchangeable without the proper access code.

- Circulating water pressure monitoring system should be available with the unit.
- Backup memory should be available in case of power failure.
- Washer should have internal memory to store data for approx 200 or more cycle. Additionally there should be a provision of USB to download cycles from the system.
- Washer should have the provision for LAN connection.
- All electrical components should be easily accessible for easy service - ergonomic design.
- Washer should have a built in self cleaning debris filter. Upon completion of the wash phase, the flow through the filter should be reversed and debris should be back-flushed into the effluent drain.
- Washer should be equipped with in triple filtration system.
- Washer should have double door which should be made of toughened glass for see through & should facilitate the loading process.

5. **Accessories:** The washer should be supplied with general instrument wash cart

2. Ultrasonic Cleaner

Item Description	Size	Qty.
Ultrasonic Cleaner	20L	01

- The units should be a compact free-standing bench model, with a built-in tank manufactured from high-quality stainless steel and a solid-state generator that sends ultrasonic (approx 37000 - 42,000 cycles per second) impulses through wash water containing detergent and electrical heating; microprocessor controlled display with memory time and temperature functions.
- External body should be made up of AISI304 Stainless Steel: Internal body should consist of AISI 304 or 316IL or 316Ti (20/10)
- The electrical energy should be transformed into sound waves by transducers, fixed to the bottom of the tank.
- The tank is made of solid stainless steel.
- The ultrasonic cleaner should have a display and control which could be easily seen and placed above any liquid for safety and reliability.
- It should have digital read out timer and temperature setting (up to +69° C (temperature adjustable from 20 to 69 °C) monitoring.
- Cleaning programme parameters should be adjustable as per following.
- Degassing facility included.
- Tank of stainless steel with internal dimensions
Approx 495 x 290 x 150 mm (L x W x D)
Voltage: 210-240V
Capacity: 20 Ltr.
- **Ultrasonic cleaner should be US FDA approved.**
- Ultrasonic cleaner should supply with wire mesh basket, of appropriate size to fit into the chamber.
- Cleaning program parameters should be adjustable as per following:-
Time: - 1 to 99 minutes.
Heating:- 20 to 50 degree Celsius.

Water Flow:- Off, Linear, Pulsed, Mixed

- Control panel :-
 - LCD display of at least 4 rows and 10 columns.
 - 16 keys control keyboard.
 - Printer output with printer to keep record of performed washing cycle.
 - Should have alarm and safety features for water level control, cover control, water temperature control and sensor failure control.

B. STERILIZATION

Steam Sterilizers: For all HEAT and MOISTURE STABLE LOADS

Sl. No.	Item Description	Size	Qty.
1.	Steam Sterilizers with integrated Steam Generator	Small 200 to 250 L (Two Door) (with emergent Flash Cycle)	01
2 (a).	Steam Sterilizers	Large 900 to 1000 L (Two Door)	01
2(b).	Steam Generator	Inbuilt or attached to Large Steam Sterilizer	01

1. Horizontal Steam Sterilizer 200-250 Ltr. with Accessories

- Dual Microprocessor controlled steam under pressure, free standing sterilizer /autoclave having double jacketed rectangular 316L /316Ti grade Stainless Steel chamber.
- Size: 250 to 300 Ltrs Processing capacity should be minimum 2 STU.
- The Sterilizer should have adjustable cycle time which should be less than 60 minutes
- Should be having Double Door (constructed of 316L or 313Ti St. Steel)
- Should be having double durable non-lubricated steam activated door seal(gasket)
- Sterilizer should also be able to perform Bowie & Dick test and vacuum leak test.
- Automatic cycling & drying and indicating completion both, visually and audibly.
- Equipped with 121 degree C pre-vacuum; 134degreeC Flash/Express cycles , 134 degree Pre-vacuum and additionally 121 degree C.
- It should have electronic water saving control / Eco water saving function – must have condenser, condensing the exhaust chamber steam to acceptable temp. as per environmental favourable good practices with excellent drain system preventing pollutants to enter water supply.
- It should have touch sensitive 4-5” colour display screen with LED/LCD controls with battery back-up and digital thermal printer as standard for records keeping.
- Sterilizer should have inbuilt Electric Vacuum.
- Should have inbuilt Electric Steam Generator made of 316 Ti S.S
- Quality steam i.e. condensate free , 97 to 100% saturated vapour complete with piping ; valves and pressure relief etc. delivery at 50 to 80 psig pressure
- Extra air compressor, if required, price inclusive and should not be offered additionally.
- The panel should include various pressure & temperature display for depiction of actual pressure/ temperature in chamber, jacket and on gasket.
- Water consumption should be minimum with electronic water saving controls
- Electrical Service – 440 V,50 Hz, 3phase
- Accessories to include: Loading Cart & Carriages

- To test autoclave integrity provide Bowie Dick Test packs -50 no. @one per week
- Offer rates for Sterility assurance Products for approx. 300 cycles i.e, Biological indicators -300 no., Incubator & activator for Bio-Indicator -1 no.
- Other consumables for validation and packaging should be offered
- Also offer cleaning chemicals for weekly cleaning process of chamber and drains
- Firms must provide suitable local compressor/water softener/ with each unit, as per requirement.
- **Standard: Conforming to US FDA. (Certified)**
- The manufacturing firm should have spares availability in India and must have own trained service engineers

2. Horizontal Autoclave (Double door)

Horizontal Steam Sterilizer 900-1000 Ltr. with Accessories

- Dual Microprocessor controlled steam under pressure, free standing sterilizer /autoclave having double jacketed rectangular 316L /316Ti grade Stainless Steel chamber. Sterilizer vessel assembly should be formed with two S.S. sheets one within another.
- Size: 900 to 1000 Ltrs and should have minimum processing capacity of 12 to15 STU per cycle irrespective of volume in Ltr.
- The Sterilizer should have adjustable cycle time which should be less than 55 minutes.
- Should be having Double Door (constructed of 316L or 313Ti St. Steel)
- Should be having durable non-lubricated steam activated door seal (gasket) on both the doors. Supplier should provide minimum two years of warranty on the door gaskets
- Sterilizers without gravity cycle at 135°C will also be considered.
- Sterilizer should be able to perform Bowie & Dick test and vacuum leak test.
- Sterilizer should have fully automatic operation with multiple cycle selection as well as & drying phase. The audio as well as visual indication should be provided after the completion of each cycle.
- Sterilizer should be equipped with 132 degree C pre-vacuum; 135degreeC, Liquid cycle with 121deg C with 45 mins exposure time and Gravity Cycle at 135deg C. All these cycles should be pre feed into the control system and should be validated as per US FDA standards.
- Sterilizer should have electronic water saving control / Eco water saving function included – which should have condenser, condensing the exhaust chamber steam to acceptable temp. as per environmental favourable good practices as well as excellent drain system preventing pollutants to enter water supply.
- Sterilizer should have touch sensitive 4-5” colour display screen with LED/LCD controls with battery back-up and digital thermal printer as standard for records keeping.
- Sterilizer should have inbuilt vacuum pump for creating pre vacuum before sterilization phase as well as post sterilization drying phase. It should have the bacteria retentive filter.
- Sterilizer should be supplied along with or inbuilt steam generator with approx 50 to 70Kw capacity for faster cycle.
- Colored display screen: one may ask for 4-8 inches colored screen.
- Sterilizer should have safety features such as pressure relief safety valve, chamber float switch in case of excess condensate accumulation in the chamber, door safety in case of door obstruction etc.

- Sterilizer supplied should have dual RDT sensors for temperature in the Chamber and one RTD sensor for pressure near drain point.
- Quality steam i.e. condensate free, 97 to 100% saturated vapour complete with piping; valves and pressure relief etc. delivery at 50 to 80 psig pressure. Importantly to ensure only clean steam enters in the chamber, both jacket & chamber should have independent steam supply lines.
- The panel should include various pressure & temperature display for depiction of actual pressure/ temperature in chamber, jacket and on gasket.
- Water consumption should be low & features like electronic water saving controls or ECO water saving should be provided.
- Electrical Service – 415V, 50 Hz, 3phase
- The supplier should do the complete onsite stainless steel panelling to all the sterilizers at both the sides
- Accessories to include: S.S. Loading Cart & Carriages
- Sterilizer units should be supplied with Bowie Dick Test packs -500 cycles (To test autoclave integrity), Batch indicators- 500 cycles, Chemical Indicators-500 Cycles, Biological indicators -500 cycles. This will be the total quantity provided along with all the sterilizers.
- Firms must provide suitable local Air Compressor as well as R.O water system of suitable capacity (including motor, storage tank & piping till the unit) along with sterilizers as per the requirement.
- **Standard: Conforming to USFDA (Certified)** and Pressure Vessel should be certified as per ASME/PED guidelines.
- The manufacturing firm/authorized distributor should have spares availability in India and must have direct operations in India with own trained service engineers to ensure service backup.

3. **Heat Sealing Machine-Manual:**

The unit should have manual heat adjustments and should be microprocessor controlled and with constant temperature.

- System should be suitable for the sealing of surgical instruments in paper envelopes.
- Should be microprocessor controlled.
- Smooth easy cleaning surfaces.
- Quick sealing time with sealing width of 12mm.
- It should be a compact table top system.
- Ergonomic handling with anti fatigue movement.

4. **Closed Transport Trolley: 4nos**

Area : Sterile Store to OT
Size : 1500x750x1260 mm

- A trolley for sterile goods handling where higher than normal dust protection is required, e.g. short transports between hospital buildings. Suitable for handling baskets or containers with a total capacity of 9 STU (1 STU = 600 x 300 x 300 mm) on three solid, removable shelves (3 x 3 STU).
- Trolley should be fitted with large stainless steel wheels (Ø 160 mm) for easier manoeuvrability.
- Two fixed wheels and two swivel wheels with brakes.
- The fully welded stainless steel construction (minimum 18 gauges, 304) makes it suitable for cabinet washers. The doors open 270° for easy access and cleaning.

- Trolley should have lockable doors and should include handlebars.
- **Product should be CE certified /FDA/BIS approved.**

5. Instrument Tray - 40 Nos.

**Area : Various movement
Size: 480x250x70 mm**

- It should be modular design with standard sizes and high precision and should be designed for use with modular wire baskets through all phases of instrument processing: washing and disinfection (both manual and in an automatic washer-disinfector), ultrasonic cleaning, inspection and packing, sterilization, storage, distribution and usage.
- It should be self-drying after disinfection in hot water (min.+85°C)
- Instrument trays should be sturdy, jig-welded trays maintain their size and shape even if handled carelessly.
- It should be stackable.
- The tray is made of stainless steel (304) wire net, with a maximum mesh size of 6.5 mm and a wire diameter of 1.5 mm. This design gives optimal cleaning results and at the same time prevents instruments from penetrating the sides of the tray.
- All cross-points in the network and vertical wires to top and bottom frames should be point welded. All free wire ends should be soft-polished to prevent injury when handled.
- The bottom wire construction should include a rigid, 3 mm diameter, stainless steel (304) wire frame to provide space for airing between goods and work surface and to allow use on roller, belt and chain conveyors.
- It should be electro-polished for smooth, clean surfaces and also suitable for ISO modular wire baskets.
- It should be with lid and handle.
- **Product should be CE certified /FDA/BIS approved.**

6. Modular Wire Baskets, SPRI,

Size	Qty.
Size (L x W x H), 585 x 395 x 195 mm	50
Size (L x W x H), 585 x 395 x 100 mm	25

- It should be modular design with standard SPRI sizes and high precision and should be designed for sterilizing / processing as well as easy handling and management of the supply, storage and distribution of re-circulated sterilized goods.
- It should be self-drying after disinfection in hot water (min.+85°C)
- Instrument trays should be sturdy, jig-welded trays maintain their size and shape even if handled carelessly.
- It should be both nestable and stackable. There should be special wire support to help making baskets both stackable (when the supports are folded into the basket) and nestable (when the supports are folded out)
- The top frame should be designed such that it should serve as a handle grip for easy carrying even when heavily loaded.
- There should be no sharp edges or wires.
- The surfaces should be smooth to assure easy cleaning in a washer-disinfector.
- The baskets should be made of electro-polishes heavy-duty stainless steel (304) and should have a rigid bottom frame that gives space for airing between goods and work surfaces and allow use on roller belt and chain conveyors.

- It should be designed and manufactured in accordance with high quality specifications to assure long lifetime.
- Quotations for following sizes (with lid and handle) should be submitted:

Size (L x W x H), mm	Weight, Kg
585 x 395 x 195	1.9
585 x 395 x 100	1.7

7. Stainless steel lid for modular wire baskets, SPRI,

Size	Quantity
Size (L x W), 555 x 385 mm	50

- It should be designed so to offer greater flexibility and utilization of space, both when loading a sterilizer and during storage and transport.
- The dimensions should be 555 x 385 mm and the lid is made of heavy-duty electro-polished stainless steel (304).
- It should be self-drying after disinfection with hot water (min.+85°C)

8. STORAGE RACKS: 10nos

- Open racks should be made of stainless steel
- Storages with highly durable, and should have narrow holes for allowing ventilation
- Should be water resistant, disinfectant resistant and rust proof.
- Should be provided with lockable castors
- Should have warranty for three years.
- Approx. Dimensions: L x W x H : 180cm (H)x45 cm (W) x75cm(L)z
- The racks should be made up '304' SS (Chrome, nickel Steel 18/10 14301) as an additional qualification and must be electrolytically polished.

9. Wash Stations with 2 sinks:

Area: Cleaning and Disinfection
Size (LxWxH) : 2000x750x850 mm

- The worktop should be made of solid, bright-polished minimum sheet thickness of 1.5 mm stainless steel (304) to withstand heavy-duty work with wet instrument.
- Designed with an integrated 10 mm high edge at the front and sides, and a 60 mm high edge (splash back) at the rear.
- The front and side edges are reinforced and widened to 49 mm. Edges are welded together and polished at the corners.
- The worktop should slope to the sink, and reinforced by a full-length support frame.
- The support frame should be a complete assembly with the front, back and ends welded together at the corners.
- The worktop and support frame should be bonded together with double-adhesive tape of a special, age-resistant quality to give rigidity and noise abatement.
- The floor stand should be made of polished stainless steel.
- **Product should be CE certified /FDA/BIS approved.**

10. Pass Box (02 Nos.)

- Pass-through chamber should be based on electrical sliding hatches and should fit all types of standard racks.
- The chamber should consist of two electrically operated sliding hatches, and a plexus glass-and-aluminium construction on a stainless steel bottom plate, which is equipped with four adjustable legs for easy assembly and adjustment.
- Each hatch should have its own 24 DC motor that powers a drive belt and ensures smooth operation, as well as its own convenient push-button control to ensure that both hatches cannot be opened at the same time.
- The control should feature two modes of operation to open or close the hatch with a press button mechanism.
- The hatch should also have a built-in safety feature that prevents items from getting caught during operation.
- Please quote for various sizes available for comfortable use with standard sizes instrument box and wire baskets.

11. Height-adjustable Packing Table (02 Nos.)

- This table should be specially designed for sorting, inspection, functional control and packing of various sets for wards, clinics etc. and for surgical instrument sets in trays.
- The height of the table can be quickly and easily adjusted to a comfortable working height for each staff member – whether sitting or standing, thereby also reducing the risk of injury due to strain.
- Height should be adjusted electrically within a 500 mm range (between 755 and 1255 mm) by means of a switch under the front edge of the worktop. The speed of adjustment is 40 mm/s.
- The worktop should be made of a robust wood-based core material, surfaced with plastic laminate in a soft beige color that reduces reflection of light from the surface.
- All edges are smooth.
- The extended width of the worktop is designed to facilitate thorough inspection of instrument trays and allow the use of large wrapping material.
- The rigid frame should be made of stainless steel (304), mounted on two stainless-steel-clad (304), adjustable-height pillars.
- There should be unobstructed access to the working space; no supports are needed along the front of the table to facilitate cleaning of floors.
- There should be a free space of 270 mm between the lower shelf and the worktop, and 160 mm between the two shelves.
- The table should be available with a two-shelf console mounted on the worktop, for storage of packaging materials.
- The rigid supporting columns should include 3 electrical outlets.
- The quotations should be submitted for the following sizes and load capacity:

Product name	Size (L x W), mm	Max Load, Kg
Height-adjustable packing table	1200 x 800	100
Height-adjustable packing table	1400 x 800	100
Height-adjustable packing table	1600 x 800	100
Height-adjustable packing table	1800 x 800	100
Height-adjustable packing table	2000 x 800	100
Fluorescent tube fittings		
Drawer unit	500 x 400	

12. **Water Treatment Plant (Capacity: 1000 Ltrs./Hr.):**

System should comprising of Cartridge Filter (MOC of Housing: PVC, Cartridge Rating: 5 Micron, Type: Poly Propylene, Service Flow: 2000lph), High Pressure Pump (Type: Vertical, Multistage Centrifugal, Service Flow: 2000 lph, Head: 13.3 Kg./Sq. Cm, Material of Construction: SS, Power: Approx. – 2KW), RO Block: 1000lph, Membrane, FRP Pressure Tubes, Instrumentation for R. O. (Pressure gauge, Flow Indicator, Pressure Switch), MCC PLC Panel for RO Block, Dosing System (with Electronic Dosing Pump, Capacity of Pump: 0 – 5 lph, Head of Pump: 20MWC), All Consumables, Inlet and outlet Water Pump, Associated Plumbing Work.

Details of Electrical Works:

<u>Work Schedule of LT Electrical Power Distribution</u>			
S.N.	Item Description	Qty.	Unit
	1 Main Power Distribution panel - Supply , installation, testing & commissioning of power distribution panel, floor mounting, free standing, dust & vermin proof. Fabricated of 2mm thick CR sheet, internally wired for control circuits and duly powder coated and power connection with suitable size Al. strip with A/M, V/M Indication Lamp & CT, S/S, Protection fuse etc, including following:		
	a) Bus bar shall be TPN type, PVC insulated, Electrolytic grade, suitable capacity Aluminium strips		
	b) All interconnections of switchgears shall be with suitable size PVC insulated Electrolytic grade Aluminium strip.		
	Power distribution circuits with MCCB		
	a) Main incomer - 315 Amp. MCCB 4 pole - 1 no		
	b) Bus bar 400A TPN type, PVC insulated, Electrolytic grade, Aluminium strips		
	c) Outgoing feeders		
	63 Amp - MCCB TPN - 4 nos.	1	job
	5/15 A: As per requirement.		

<u>Details of CIVIL WOKS</u>		
i.	Providing and fixing Ceramic glazed wall tiles (Somany / Kajaria / NTC – Make or equivalent standard make) 300 x 200 mm size on the base of 12mm thick cement mortar (1:3) after demolishing old plaster all complete with all taxes as per specification and direction of user. Rate: _____ / Sq. Meter.	
ii.	Providing and fixing vitrified tiles of size 2’ x 2’ for flooring of entire area, all complete with all taxes as per specification and direction of user. Rate: _____ / Sq. Meter.	
iii.	Provision of RO water supply and storage facility (Water Tank of at least 1000 Liters; Qty. – 02 Nos. of standard make), plumbing work and other associated civil work.	
iv.	Fabrication of bricks partion wall (as per drawing) with plaster with provision of drainage system.	
v.	To provide false ceiling (aluminium) with LED Lights of complete area.	
vi.	Renovation of existing Window by closing the same by a glass supported by aluminium frame.	
vii.	Anti bacterial paint of the sterilize zone area.	
viii.	Fire Fighting: Bidder should provide fire detection alarm and effective free fighting system.	
a	Bidder should provide adequate no. of Dry CO2 Cylinder – 2 Kg. with essential	

		accessories. Cylinder should be certified by respective regulatory board.	
		Details of ELECTRICAL WOKS	
	a.	i.	Installation of Electrical Panel of 400A with provisions of Main Switches at various places required for operation of equipments. Four nos. of outlets with Main Switch of 63A (ISI; Havel's / L & T etc.) are to be provided for used with equipments. Apart from above, suitable quantity (at least 5 nos.) 5A / 15A power sockets are to be provided inside the space. General lightning (Tube / CFL & Fan) and ventilation (Suitable Exhaust Fan) are to be also provided.
		ii.	Supply, installation and commissioning of 5 nos. of 2.0 Tr. Split Air-Conditioning System in sterilization and non-sterilization area with stabilizer of suitable capacity. Split Air-Conditioning System to be quoted should be energy efficient and 5 star rating.
		iii.	Proper earthing should be provided for the equipment.

(1) **GROUP-B- (Orthopaedics)**

2. C-Arm:-

Earlier Specifications	Revised Specifications
Fully counter balanced isocentric c-arm movement integrated cables and electronic breaks.	Fully counter balanced c-arm movement with integrated cables and electronic breaks.
	Add:- Available DSA.

2. Portable mobile X-ray Machine:-

Earlier Specifications	Revised Specifications
4. Bridge rectification.	4. High Frequency.
	Add:- 12. X-ray cassette compliable with CR system of Fuji. a. 08X10 No. 2 b. 10X12 No. 2 c. 14X17 No. 2

3. Syringe Infusion Pump:-

Earlier Specifications	Revised Specifications
18. Comprehensive warranty for 5 years and provis of CMC for next five year.	18. Comprehensive warranty for 3 years and provision of CMC for next seven year.

GROUP- C- Cardiology

a. Cardiac Cath Lab:-

Earlier Specifications	Revised Specifications
1.3. Gantry should have fast speed for angulations and positioning. All movements should be motorised with minimum speed of 15° /sec for all positions.	1.3. Gantry should have fast speed for angulations and positioning. All movements should be motorised with minimum speed of 18° /sec for all positions.
4.2. The X-ray tube should have Anode heat storage capacity of atleast 2.4 MHU or more to run continuously for 6-8 hours without shutting off.	4.2. The X-ray tube should have Anode heat storage capacity of atleast 2.4 MHU or more to run continuously for 6-8 hours without shutting off.
9.1. The system should have cross sectional C.T like imaging based on rotational angiography.	9.1. The system should have internal grid switch for radiation protection.

2. Portable Echo:-

Earlier Specifications	Revised Specifications
6. System must have fast start-up to scanning in less than 30 second from off condition, for use in critical and emergency situation.	6. System must have fast start-up to scanning in less than 30 second stand by from off condition, for use in critical and emergency situation.
9. The system shall process a dynamic range that atleast 165 DB. The system must display at a maximum depth of 35 cm.	9. The system shall process a dynamic range that atleast 165 DB. The system must display at a maximum depth of 30 cm.
15. The system must have the ability to function by AC/DC or battery power with the same degree of functionality, the battery life (run time) shall be atleast 2 hours this need to demonstrated.	15. The system must have the ability to function by AC/DC or battery power (inbuilt) with the same degree of functionality, the battery life (run time) shall be atleast 2 hours this need to demonstrated.
26. Triple transducer connector (facility to connect three transducer when system mounted in trolley symountainous and push button to swip probe).	26. Triple transducer connector (facility to connect two transducer when system mounted in trolley symountainous and push button to swip probe).

Transducer to be supplied as standard

Earlier Specifications	Revised Specifications
1. 1.5 MHz multi frequency broad band phased array transducer for adult cardiac abdominal fast imaging.	1. 2-4 MHz multi frequency broad band phased array transducer for adult cardiac abdominal fast imaging.
5.5. 8-3 MHz Trans esophageal Transducer for Trans Echocardiography application.	5.5. 3-8 MHz Trans esophageal Transducer for Trans Echocardiography application.

3. TMT Machine:-

Earlier Specifications	Revised Specifications
2.1. System Complete with PC, software, TMT and necessary cables is required with Bluetooth enabled wireless ECG transmission module.	2.1. System Complete with PC, software, TMT and necessary cables is required with ECG transmission module (Digital Acquisition).

D. TECHNICAL SPECIFICATIONS for IVUS

IVUS

System Technical Specifications:

- 1 The system should be the latest generation of Intra-vascular ultrasound for 360° image evaluation of coronary lumen .
- 2 Should be a Windows based system capable of accepting phased array and/ or mechanical transducer technology
- 3 Should be DICOM-3 compatible
- 4 Should have DICOM storage to CD-R and hospitable network compatible Compatibility with 20 MHz and 45 MHz catheters for coronary procedures
- 5 Should be accompanied with Flat Panel LCD ≥ 19” high quality monitor with keyboard, trackball and mouse or with touch pad
- 6 Data entry should be possible by keyboard and/or touch screen Hard disk storage space should be sufficient to store at least 20 clinical case studies MINIMUM 30 GB ,WITH OPTION OF REMOVABLE STORAGE.
- 7 Should have ECG input on screen
- 8 Multiple image screen format
- 9 Availability of automatic and manual measurement of all essential parameters like diameter and areas. Multi-screen format for comparison with prior measurements
- 10 Should have digital video loop storage with still frames (JPEG) with full editcapabilities including offline editing.
- 11 Digital Video loop storage: up to 8 minutes with still frames (Jpeg) with full editing capabilities including offline editing

- 12 Should have automatic border detection, both lumen and vessel
- 13 Should have on-line 2D longitudinal display and measurements (seen as longitudinal cut section of the artery) as well as cross-sectional imaging
- 14 Should be capable of incorporating coronary angiographic system (i.e. Co-registration)
- 15 Should be capable of fully integrating within the Cath-lab systems
- 16 Should have advanced features like Virtual Histology; Chromaflo or equivalent etc.
- 17 Should be capable of being upgraded to advanced features such as FFR in future, within the same system
- 18 Input power: 200 – 240 VAC; and 50/60 Hz
- 19 Clear visualization of blood flow, improved detection of blood flow; dissections, stent apposition etc.
Color distinctions for plaque composition or colored tissue map.
Should have up gradable software and network connectivity
Compatibility with Coronary, Peripheral and Intra Cardiac Catheters.
20. Accessories:
 - Printer color (01 No.)
 - CD/DVD Writer Built-in
 - IVUS catheters - 5 Nos. 0.014 guide wire compatible
 - Reusable pull-back device
- 22 Training of the departmental staff on-site will be required
- 23 **System should be US FDA approved**

NOTE; IF IVUS AND FFR IS COMBINED IN ONE SYSTEM, IT SHOULD BE OFFERED.

Integrated Optical Coherence Tomography (OCT) and Fractional Flow Reserve(FFR) System with real time online 3D imaging features

- The system should have an imaging engine that is based on the fiber optic technology.
- The system should have wireless FFR measurement capabilities.
- It should utilize catheter that emit near infra red light to produce high resolution real time images.
- Should have two monitors(17” and 19”) plus remote video output for multiple sightlines.
- The system should have an integrated drive-motor and Optical Controller (DOC).
- Should have an isolation transformer.
- Should have a computer, a keyboard, and a mouse.
- CPU with high end DAS card for faster 3-D data acquisition speed
- 22*CD/DVD RW dual player DVD RAM drive for faster image management.
- DICOM compatibility

The system should allow the user to:

- Acquire, save and subsequently retrieve images for review. Real-time 3D image Re-construction of lumen and vessel
- Immediate and accurate lumen boundary detection and Lumen Profile Display
- Stent planning workflow with automated minimum lumen area and percent stenosis measurements
- Automatic lumen detection on every frame
- Profile of mean diameter or lumen area across pullback
- Automatic marking of MLA frame
- User-defined proximal and distal reference frames
- Automated display of reference frame area and diameters, distance between references, %AS and %DS
- Automated measurements mode for calculations for stent sizing
- Seamless integration of FFR and OCT with guided workflows for exceptional ease-of-use
- Should allow user for easy orientation on Angiography
- Allow to acquire and review images in L-Mode (lateral view).
- Overlay color maps to optimize contrast resolution.
- Enlarge a defined area of interest (zoom).
- Make measurement and calculations of % Diameter stenosis
- Add text annotations.
- Play back and edit images with a full range of playback and editing capabilities.
- Export still images and movies in raw OCT format or in standard AVI, TIFF, JPEG,BMP, or DICOM formats.
- Import OCT format images and review and edit them with full OCT review and edit capability.
- Perform basic file management functions.

The imaging Parameters of the system should be:

- Maximum frame rate: Up to 180 fps
- Longer pullback of up to 75 mm and up to 540 frames
- Faster pullback speed up to 36 mm/sec
- Allows user to do high resolution imaging for online real time 3-D re-construction # of lines per frame: 500
- Scan diameter: 10 mm
- Axial Resolution: 15 microns

The specification, other terms and conditions as mentioned in the tender notice will remain the same.

- **The due date of submission of bid has been extended up to 15/07/2016 (4:00 PM).**
- **Opening date 16/07/2016 (11:30 AM)**

Sd/-
Store Officer-cum- Procurement Consultant
I.G.I.M.S. - Patna