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Schedule No. 1- Cautery Machine/Electro Surgical Unit with advance vessel sealer system

Sr. No.	Description of Technical Specification
1	Should have following output features
a	Monopolar Cutting 1 and Monopolar Coagulation 1
c	Bipolar Cutting and Bipolar Coagulation. In Bipolar coagulation should preferably have different modes.
2	Each of the outputs mentioned above should be able to set individually either through the channel selector or the Menu.
3	The Systems should be able to detect automatically and adjust settings according to impedance level of tissue.
4	The display should allow to check at a glance which program is currently Being used (Monopolar, bipolar, cutting or coagulation), the set output power, the selected type of current, the selected switching system (hand or footswitch) and the selected neutral (i.e. dispersive) electrode.
5	Should have features for multipurpose surgery such as General Surgery, Gynecology, Orthopedics, Oncology etc. with Vessel Sealing System.
6	Should have special output for Bipolar Scissors
7	Should have facility for open surgery sealing of vessels with reusable clamp forceps.
8	Should have Endoscopic vessel sealing facility.
9	It should at least have following modes:
a	Monopolar – Cut (Low, Pure/Auto Cut, Blend/ Dry Cut)
b	Monopolar – Coag (Dessication, Fulg/ Forced, Spray)
C	Bipolar – (Precise, Standard, Macro)
10	<u>Bipolar Coagulation should offer following Modes</u>
a	Open Surgery sealing
B	Endoscopic vessel sealing.
11	The Vessel Sealing Clamp for open surgery should be of the same parent company as the Vessel Sealing System.
12	The Laproscopic Instrument should be capable of Vessel Sealing and Cutting in the same instrument and the Laproscopic Instrument should be of the same parent company as of the Vessel Sealing Unit.
13	The laproscopic vessel sealing instrument (with inbuilt cutting) should be reusable and not disposable.
14	Argon Beamer Unit not required along with the Vessel Sealing System.
15	Should be European CE Certified or US-FDA Certified.
16	The System should be quoted along with the following Accessories.
a	Vessel sealing System-1
b	Hand Control Pencil (Reusable) -1
c	Double Pedal Footswitch-1
d	Patient Plate (Reusable)-2 reusable plates
e	Bipolar Cable -1
f	Bipolar Forceps -1
g	Electrode set-1
h	Vessel sealing Clamp 2 reusable clamps - length 200 mm and 210 mm, 1 each.
i	Laparoscopic Vessel Sealing Probe with inbuilt cutting reusable 1. Laparoscopic vessel sealing instrument should be provided with Maryland and Fenestrated jaws so that it can be used in all specialities (General Surgery, Gynae, Onco).
j	Capable of sealing vessels up to 7mm Dia.
17	Automatic stoppage in case of malfunction with acoustic or visual signals

18	System for neutral plate safety by continuous monitoring of contact quality and connection.
19	Relevant IEC certificates
20	Display should allow to check at a glance which program is currently being used (Monopolar1, Monopolar2, Bipolar, Cutting or coagulation), the set output power, the selected type of current, the selected switching system (hand or footswitch) and the selected neutral (i.e. dispersive) electrode.
21	Replaced as: Under Accessories clause: Patient Plate- 2 nos. Reusable silicon plates (dual type); Vessel Sealing Clamp: 2 reusable clamps; Laproscopic Vessel Sealing probe (with inbuilt cutting): Reusable 1 no. ; Rest accessories remain same.
22	The bidder should submit relevant and applicable IEC certificate along with European CE/ US FDA certificate.
23	Warranty- 3 years
24	CMC- 5 years after 3 years warranty

Schedule No. 2- Mid end Anesthesia machine

Sr. No.	Description of Technical Specification
1	3 Gas (O ₂ , N ₂ O and Air) Anesthesia apparatus with Compact, Autoclavable, Heated Breathing System for low flow Anesthesia delivery with any quick mount type vaporiser.
2	must have antistatic castor wheel.
3	Should have Yoke for O ₂ and N ₂ O for Spare Cylinder.
4	must have color coded yoke & port.
5	must have pin index system.
6	Should have hypoxic guard
7	must have pop of valve.
8	must have oxygen failure alarm.
9	Must be quoted with Isoflurane Vaporizers. Price should be given for Sevoflurane and Halothane vaporizer seperately in price bid.
10	calibrated vaporizer.
11	agent specific vaporizer.
12	pressure compensated.
13	flow compensated.
14	must have inbuilt anesthesia ventilator.
15	Must have circle absorber.
16	Must have antistatic corrugated tubing.
17	Must Provide an area to arrange medicines & drugs.
18	Should have Provision for Central Supply connection for O ₂ , N ₂ O and Air for 3 Gas System. Should have Provision for O ₂ and N ₂ O Yoke (1 each) to connect Spare Cylinders.
19	breathing circuit with inflation pressure manometer.
20	5 metres of high pressure tubing colour coded for oxygen and nitrous oxide with NIST connectors at the machine end." NIST(Non-Interchangeable Screw Threaded) connector should be used.
21	The sodalime lime canister should be vertically mounted single/double chambered with 950 ml or more capacity and bypass function for changing sodalime intraoperatively.
22	table top for keeping the monitor and
23	Anaesthesia Ventilator: Should have inbuilt ventilator with 7 Inch or more Colour TFT , O ₂ Monitoring , Pressure ,Flow ,Volume waveform monitoring.
24	Anesthesia Ventilator should have Volume and Pressure Controlled Ventilation Modes. Should have Tidal volume range from 50 ml onwards or better.
25	Should have visible inspiratory and expiratory valves.
26	It should be Adjustable Pressure Limiting valve (APL Valve).
27	Should have single switch change over from spontaneous to bag ventilation.

28	Should have local technical support, technical engineer for 24 hours.
29	1. Hypoxic guard should be available
30	2. Low flow < 1 lit combined gas.
31	Added - It should have battery backup of 30 min.
32	US FDA/ European CE from notified body.
33	Warranty- 3 years warranty
34	CMC- 5 year CMC after 3 years warranty

Schedule No. 3- Operating Laparoscopic surgery set with Endoscope, LED screen monitor, Cold LED Light source, Digital CO2 insufflators, Three chip HD camera system & Laparoscopy trolley.

Sr. No.	Description of Technical Specification
1	HAND INSTRUMENTS & ACCESSORIES FOR LAPAROSCOPY SET
2	Trocar & Cannula: Cannula size: 11 mm diameter; should have multifunctional valve and automatic valve to prevent damage of sharp instruments. It should have stopcock for CO2 insufflation. Trocar should have pyramidal tip with pin holes near the tip for safety outlet of CO2 gas. The working length of the cannula should be 100-110 mm- 3
3	Trocar & Cannula: Cannula size: 5mm diameter: should have multifunctional valve and automatic valve to prevent damage of sharp instruments and 18quipme tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. Trocar should have pyramidal tip with pin holes near the tip for safety outlet of CO2 gas. The working length of the canula should be 100-110 mm- 4
4	Veress Needle: Veress needle of working length 13 cm with luer lock- 2
5	Reducer 11/5 mm- 2
6	Grasping forceps- Babcock, Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 35-36cm, Should be dismantlable into three parts namely, outer tube, handle and inserts- 1
7	Grasping Forcep Fenestrated: Atraumatic serration, fenestrated, grasping forcep with unipolar connection, insulated sheath, handle without ratchet. Should be dismantlable into three parts namely, outer tube, handle and inserts. Length between 35-36cm, size: 5.0mm. - 1
8	Grasping Forcep Fenestrated curved Fundus grasper: Atraumatic, fenestrated, curved grasping forcep with unipolar connection, insulated sheath, handle without ratchet. Should be dismantlable into three parts namely, outer tube, handle and inserts. Length between 35-36cm, size: 5.0mm- 1
9	Bowel Grasping Forcep: Bowel Grasper fenestrated, size: 5.0mm, length 35-36cm, handle with ratchet, insulated shaft. Should be dismantlable into three parts namely, outer tube, handle and inserts- 2
10	Unipolar curved Maryland dissecting and Grasping Forcep: Kelly curved dissecting and grasping forceps insulated, atraumatic, working length 36 cm, size: 5mm, dismantlable into three parts namely handle, insert and working tube. Handle without ratchet- 2
11	Insert Forcep Unipolar: Insert forcep only Maryland type curved atraumatic jaw compatible with main Kelley curved dissecting forceps- 1
12	Unipolar curved Right angle dissecting and Grasping Forcep: Kelly curved dissecting and grasping forceps insulated, atraumatic, working length 36 cm, size: 5mm, dismantlable into three parts namely handle, insert and working tube. Handle without ratchet- 2
13	Tooth Grasping Forcep; Grasping forceps — toothed 2x 3 teeth, Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 35-36cm, dismantling into three parts namely handle, insert and working tube. Handle with ratchet- 2
14	Grasping forceps- Allis , Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility into three parts namely handle, insert and working tube. Handle with ratchet- 1
15	Scissor curved Unipolar: METZENBAUM curved scissor, length of blade 12mm-15mm, connection for unipolar HF cable, dismantlable into insert, tube and handle. Working length 36 cm, size: 5mm, handle without ratchet- 2

16	Hook Scissor Hook scissor, with connection for unipolar HF cable, dismountable into insert, tube and handle. Working length 36 cm, size: 5mm, handle without ratchet- 1
17	L Hook HF: L-shaped hook dissector with unipolar HF connection. Size 5 mm, length 36 cm (Approx)- 2
18	J Shape Hook -5 mm ,33 cm monopolar- 2
19	Debakay Forceps- 5 mm,33 cm (approx). rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 1
20	Alligator jaw forcep, 33cm (approx) rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 2
21	Spatula/Blunt HF dissector: Spatula/Blunt dissector with unipolar HF connection 5 mm, 35-36 cm (approx)- 1
22	Single action claw forceps, 10 mm, 35-36 cm (approx), double action jaw, rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 2
23	Spoon Forcep: Retrieval of foreign body/stones forcep, size 10mm without ratchet- 1
24	Heavy Duty Robust Bipolar Forcep length: 36cm, 5 mm rotating dismountable, dismantling facility into three parts namely handle, insert and working tube preferably wide jaw with spare insert and handle Suitable bipolar HF cable 2 Nos. to be included along with it- 1
25	Bipolar HF Connecting cable- 4
26	Clip Applicator: Medium Large clip applicator dismantable rotating size: 10mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip.It should be compatible with more than one brand. Dismantling facility into three parts namely handle, insert and working tube- 1
27	Clip Applicator: Large clip applicator dismantable rotating size: 10mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip. It should be compatible with more than one brand- 1
28	Haemolock clip applicator 10 mm size . It should be compatible with more than one brand- 1
29	Haemolock clip applicator 5 mm size. It should be compatible with more than one brand- 1
30	Washers , For 5 & 10 mm cannula and reducers- 10 Qty each size
31	Two Way Suction irrigation cannula, size: 5mm&10mm each with special handle with trumpet control for irrigation and suction with silicon tubing- 1
32	Puncture Needle, size: 5mm, length 36cm, diameter 1.2 mm (approx)- 1
33	Needle Holder: Macro needle holder with tungsten carbide insert, ergonomic pistol handle, with disengageable ratchet, jaw curved to left, size: 5mm, length : 33cm for use with suture material size: 0/0 to 7/0- 2
34	Unipolar HF Cable: Unipolar HF cable suitable to connect with forcep and electrosurgical unit- 2
35	Myoma holding screw, 5 mm diameter and working length 30 cm- 1
36	Knot pusher and Knot tier. 5 mm diameter, working length of at least 30 cms. For knotting- 1
37	HP Hose: Suitable high pressure hose pin index to connect the gas to insufflator, length : 1.0 meter- 1
38	Suitable Autoclavable plastic tray double tray for sterilization and storage for hand instruments of minimum 20 hand instruments : Any good make- 2
39	Sterilization/Disinfection Tray: Disinfection/Sterilization tray with sieve tray to lift. Size: 27"x7"x5"(LxBxD) (Approx)- Any good make- 1
40	Formaline Chamber: Formaline Chamber made of Virgin Acrylic 4.5mm thickness; size:26"x8"x8"(LxBxH)(Approx)- Any good make- 1
41	CO2 Cylinder: D type----with hose pipe and regulator and connector 30 Kg- Any good make- 1
42	Carbon Dioxide bottle with pin index connection with wrench - Any good make- 2
43	SUCTION & IRRIGATION DEVICE: Compact suction and irrigation unit having Irrigation pressure not less than 400mmHg & Suction pressure not less than (-0.75mmHg). The unit should be supplied with 1.5 Litre glass bottle with bottle cap and stand; The unit should be supplied with 1.0 Litre irrigation bottle sterilizable in autoclave with bottle cap attachment to connect tubing. The unit should be supplied with reusable irrigation and suction silicon tubing set 2 Nos. each. Should be IEC 601-1, CE according to MDD- 1

44	Uterine elevator/manipulator :- Uterine elevator/ manipulator should have capability to maneuver uterus in to all directions like antivert- retrovert, Right site & left sight turn. It should provide effective comptonization. Outer ring should be made of high quality silicon material so that it should not damage energy source while colpotmization. It should provide minimum 3 different size of cup for use in case of different size of uterus to hold cervix. It should have mechanism to hold the cervix so that inside push can be possible and outside easy removal form patient is possible- 1
45	All instruments Should be USFDA or European CE approved
46	Endoscope
47	Description of Technical Specification
48	Straight Forward High definition Telescope 0° enlarged view, diameter 10 mm, length 31 cm ($\pm 10\%$), autoclavable, fiber optic light transmission incorporated connection for fiber optic light cable offset by 90°, USFDA/European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head .
49	Straight Forward High definition Telescope 30° enlarged view, diameter 10 mm, length 31 cm ($\pm 10\%$), autoclavable, fiber optic light transmission incorporated connection for fiber optic light cable offset by 90°, USFDA/ European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head.
50	Replaced as- Forward-Oblique High definition Telescope 30° enlarged view, diameter 5 mm, length 29 cm($\pm 10\%$), autoclavable, fiber optic light transmission incorporated, connection for fiber optic light cable offset by 90°, USFDA/European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head.
51	Specification rod lens system Scratch resistant Adaptability to high intensity Xenon light 300 watts
52	Certificate- Should be USFDA / European CE approved.
53	Warranty- 3 years warranty
54	CMC- 5 year CMC after 3 years warranty
55	LED screen monitor HD
56	Description of Technical Specification
57	MEDICAL GRADE 26"HD LED monitor, Special features: HD display in original 16: 9 HD format. LED crystal display. Max. Resolution of 1920X1080. Should Compatible with Three chip HD camera system. Should have Picture in picture mode facility, Should have Video Inputs: 2* DVI-D , 2* 3G SDI, 1* S Video - 1 Composite, 1* RGB/VGA , 1* RS 232 , 1* RJ 45 Interface. Should have Output: 1* DVI, 1* 3G SDI, 1* S-Video. Supply with Accessories External 24VDC Power Supply, Mains Cord, Pedestal.
58	If any bidder is quoting CMOS technology camera then it should be compatible with quoted LED screen monitor HD (CMOS technology is also acceptable subject to equivalent to three chip HD technology and successful demonstration to subject experts.)
59	Certificate- Should be USFDA / European CE approved.
60	Warranty- 3 years warranty
61	CMC- 5 year CMC after 3 years warranty
62	Cold LED Light source

63	Description of Technical Specification
64	Lamp: led
65	Color Temperature: 6000 K
66	Lamp Power : Equivalent to 300Watt xenon
67	Working Noise : <55DB
68	Operating Life : 25,000 to 50,000 hours
69	Outside electrical source: 220V±10%,50Hz
70	Dims. : standard
71	Net.Weight. : standard
72	Should be supplied with one Light cable Diameter 4.8mm, Length 300cm.
73	Warranty Terms: 3 year warranty
74	CMC- 5 year CMC after 3 years warranty
75	Certificate- Should be USFDA / European CE approved.
76	Digital CO2 insufflator
77	Description of Technical Specification
78	CO2 Electronic Insufflator: Electronic CO2 insufflators Should have an adjustable flow rate Gas flow/min should be atleast 0-40 Lit / min or above. Pressure (mmHg) 0-30 (mmHg), Intra-abdominal pressure guage 0-50 (mmHg), Power supply 100-240 VAC (50/60 Hz)
79	Certified to IEC 601 – 1, CE label according to MDD. -High degree of patient safety. -Clear, adjacent display for set value and actual value allow easy monitoring of insufflations process, - Touch keys for precise pre-selection of set values.
80	Should have High Pressure Hose, American connection / pin-Index connection (CO2), length 102cm.Safety – constant monitoring of Intra-abdominal pressure; any overpressure is reduced immediately.
81	Certificate- Should be USFDA / European CE approved.
82	Warranty Terms: 3 year warranty
83	CMC- 5 year CMC after 3 years warranty
84	Three chip HD camera sytem:
85	Description of Technical Specification
86	HD CAMERA SYTEM,• It should have Pure digital signal with high definition video of 1920x1080p (min) native resolution and progressive scan technology both on camera head and console,
87	The system should have facility of Optical & Digital Zoom lens to enhance the quality of Image size. it should have a option for Capturing FULL HD Videos/ HD Stills and connecting facility to facilitate direct printouts.
88	CMOS technology is also acceptable subject to equivalent to three chip HD technology and successful demonstration to subject experts.
89	• It should be compatible with Aspect ratio of 16:9
90	System should have Video output: 2 x DVI-D output, 1 x 3G-SDI output, LAN connection, at least 2 USB connection
91	• The system should automatically optimize all settings. The system should be ready- to- use as soon as it is connected to the camera control unit.
92	• The system should be Menu driven, thus allowing the surgeon to program the camera head functions as per the surgical needs & requirement. Should have resolution of 1920 x 1080p, character generator/ touch screen control for inputs.
93	Must Have at least 6-9 surgical specialties in camera so it can be can be used by other departments for various surgeries
94	There should be direct fiber output in camera for transmission to other screen purpose
95	European CE/USFDA approved

96	Laparoscopy trolley
97	Description of Technical Specification
98	Equipment Cart, wide, high , rides on 4 antistatic dual wheels equipped with locking brakes, mains switch on cover, central beams with integrated electrical sub distributors with 12 sockets, grounding plugs, Dimensions in mm (w x h x d):Equipment cart: 830 x 1474 x 730($\pm 10\%$),Shelf: 630 x 25 x 510($\pm 10\%$) Caster diameter:150mm ,consisting of:- Beam Package, equipment cart high 3 X Shelf, wide , Drawer Unit with Lock, wide , - 2X Equipment Rail , long , - Camera holder. Monitor Holder, Monitor Holder, height adjustable, swiveling and tilting , swivel range approx. 360 degrees. Load capacity max 18 kg, with monitor fixation VESA 75/100.
99	Certificate- Should be USFDA / European CE approved.
100	Warranty Terms: 3 year warranty
101	CMC- 5 year CMC after 3 years warranty
102	Note: - Core items which include HD camera, light source, monitor, insufflators, suction irrigation and telescopes are from same manufacturer. For hand instruments 10% instruments from other manufacturer is allowed and these 10 % hand instruments should be compatible with the core items; the responsibility of which is vested on the bidder quoting for these item. The hand instruments quoted by bidder are European CE approved/USFDA approved.
103	3 year Warranty , 5 year CMC

Schedule No. 4- Endoscope

Sr. No.	Description of Technical Specification
1	Straight Forward High definition Telescope 0° enlarged view, diameter 10 mm, length 31 cm ($\pm 10\%$), autoclavable, fiber optic light transmission incorporated connection for fiber optic light cable offset by 90°, USFDA/European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head.
2	Straight Forward High definition Telescope 30° enlarged view, diameter 10 mm, length 31 cm ($\pm 10\%$), autoclavable, fiber optic light transmission incorporated connection for fiber optic light cable offset by 90°, USFDA/ European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head.
3	Replaced as- Forward-Oblique High definition Telescope 30° enlarged view, diameter 5 mm, length 29 cm($\pm 10\%$), autoclavable, fiber optic light transmission incorporated, connection for fiber optic light cable offset by 90°, USFDA/European CE approved. Telescope should have defined length and capability of autoclavable for Sterilization QTY-01, also provide with Plastic Container Suitable for gas, steam, and hydrogen peroxide for sterilization and storage, perforated, with lid for use with two rigid endoscope suitable for the supplied endoscope (Could be of different manufacturer) Qty - 01. Should preferably supply with connector to keep light cable parallel to camera head.
4	Specification rod lens system Scratch resistant Adaptability to high intensity Xenon light 300 watts
5	Certificate- Should be USFDA / European CE approved.
6	Warranty- 3 years warranty
7	CMC- 5 year CMC after 3 years warranty

Schedule No. 5- LED screen monitor HD

Sr. No.	Description of Technical Specification
1	MEDICAL GRADE 26"HD LED monitor, Special features: HD display in original 16: 9 HD format. LED crystal display. Max. Resolution of 1920X1080. Should Compatible with Three chip HD camera system. Should have Picture in picture mode facility, Should have Video Inputs: 2* DVI-D , 2* 3G SDI, 1* S Video - 1 Composite, 1* RGB/VGA , 1* RS 232 , 1* RJ 45 Interface. Should have Output: 1* DVI, 1* 3G SDI, 1* S-Video. Supply with Accessories External 24VDC Power Supply, Mains Cord, Pedestal.
2	If any bidder is quoting CMOS technology camera then it should be compatible with quoted LED screen monitor HD (CMOS technology is also acceptable subject to equivalent to three chip HD technology and successful demonstration to subject experts.)
3	Certificate- Should be USFDA / European CE approved.
4	Warranty- 3 years warranty
5	CMC- 5 year CMC after 3 years warranty

Schedule No. 6- Cold LED Light source

Sr. No.	Description of Technical Specification
1	Lamp: led
2	Color Temperature: 6000 K
3	Lamp Power : Equivalent to 300Watt xenon
4	Working Noise : <55DB
5	Operating Life : 25,000 to 50,000 hours
6	Outside electrical source: 220V±10%,50Hz
7	Dims. : standard
8	Net.Weight. : standard
9	Should be supplied with one Light cable Diameter 4.8mm, Length 300cm.
10	Warranty Terms: 3 year warranty
11	CMC- 5 year CMC after 3 years warranty
12	Certificate- Should be USFDA / European CE approved.

Schedule No. 7- Digital CO2 insufflator

Sr. No.	Description of Technical Specification
1	CO2 Electronic Insufflator: Electronic CO2 insufflators Should have an adjustable flow rate Gas flow/min should be atleast 0-40 Lit / min or above. Pressure (mmHg) 0-30 (mmHg), Intra-abdominal pressure gauge 0-50 (mmHg), Power supply 100-240 VAC (50/60 Hz)
2	Certified to IEC 601 – 1, CE label according to MDD. -High degree of patient safety. -Clear, adjacent display for set value and actual value allow easy monitoring of insufflations process, - Touch keys for precise pre-selection of set values.
3	Should have High Pressure Hose, American connection / pin-Index connection (CO2), length 102cm.Safety – constant monitoring of Intra-abdominal pressure; any overpressure is reduced immediately.
4	Certificate- Should be USFDA / European CE approved.
5	Warranty Terms: 3 year warranty
6	CMC- 5 year CMC after 3 years warranty

Schedule No. 8- Three chip HD camera sytem:

Sr. No.	Description of Technical Specification
1	HD CAMERA SYETEM,• It should have Pure digital signal with high definition video of 1920x1080p (min) native resolution and progressive scan technology both on camera head and console,
2	The system should have facility of Optical & Digital Zoom lens to enhance the quality of Image size. It should have a option for Capturing FULL HD Videos/ HD Stills and connecting facility to facilitate direct printouts.
3	CMOS technology is also acceptable subject to equivalent to three chip HD technology and successful demonstration to subject experts.
4	It should be compatible with Aspect ratio of 16:9 System should have Video output: 2 x DVI-D output, 1 x 3G-SDI output, LAN connection, at least 2 USB connection
5	The system should automatically optimize all settings. The system should be ready- to- use as soon as it is connected to the camera control unit.
6	The system should be Menu driven, thus allowing the surgeon to program the camera head functions as per the surgical needs & requirement. Should have resolution of 1920 x 1080p, character generator/ touch screen control for inputs.
7	Must Have at least 6-9 surgical specialties in camera so it can be can be used by other departments for various surgeries
8	There should be direct fiber output in camera for transmission to other screen purpose
9	European CE and USFDA approved
10	3 year Warranty , 5 year CMC

Schedule No. 9- Laparoscopy trolley

Sr. No.	Description of Technical Specification
1	Equipment Cart, wide, high , rides on 4 antistatic dual wheels equipped with locking brakes, mains switch on cover, central beams with integrated electrical sub distributors with 12 sockets, grounding plugs, Dimensions in mm (w x h x d):Equipment cart: 830 x 1474 x 730(±10%),Shelf: 630 x 25 x 510(±10%) Caster diameter: 150mm, consisting of: - Beam Package, equipment cart high 3 X Shelf, wide, Drawer Unit with Lock, wide, - 2X Equipment Rail, long, - Camera holder. Monitor Holder, Monitor Holder, height adjustable, swiveling and tilting swivel range approx. 360 degrees. Load capacity max 18 kg, with monitor fixation VESA 75/100.
2	Certificate - Should be USFDA / European CE approved.
3	Warranty Terms: 3 year warranty
4	CMC- 5 year CMC after 3 years warranty

Schedule No. 10- HAND INSTRUMENTS & ACCESSORIES FOR LAPAROSCOPY SET

Sr. No.	Description of Technical Specification
1	Trocar & Cannula: Cannula size: 11 mm diameter; should have multifunctional valve and automatic valve to prevent damage of sharp instruments. It should have stopcock for CO2 insufflation. Trocar should have pyramidal tip with pin holes near the tip for safety outlet of CO2 gas.The working length of the cannula should be 100-110 mm- 3
2	Trocar & Cannula: Cannula size: 5mm diameter: should have multifunctional valve and automatic valve to prevent damage of sharp instruments and 18quipme tip lens while passing through the cannula valve. It should have stopcock for CO2 insufflation. Trocar should have pyramidal tip with pin holes near the tip for safety outlet of CO2 gas. The working length of the canula should be 100-110 mm- 4

3	Veress Needle: Veress needle of working length 13 cm with luer lock- 2
4	Reducer 11/5 mm- 2
5	Grasping forceps- Babcock, Double action jaws, rotating with connector pin for unipolar coagulation, size 5mm, length 35-36cm, Should be dismantlable into three parts namely, outer tube, handle and inserts- 1
6	Grasping Forcep Fenestrated: Atraumatic serration, fenestrated, grasping forcep with unipolar connection, insulated sheath, handle without ratchet. Should be dismantlable into three parts namely, outer tube, handle and inserts. Length between 35-36cm, size: 5.0mm- 1
7	Grasping Forcep Fenestrated curved Fundus grasper: Atraumatic, fenestrated, curved grasping forcep with unipolar connection, insulated sheath, handle without ratchet. Should be dismantlable into three parts namely, outer tube, handle and inserts. Length between 35-36cm, size: 5.0mm- 1
8	Bowel Grasping Forcep: Bowel Grasper fenestrated, size: 5.0mm, length 35-36cm, handle with ratchet, insulated shaft. Should be dismantlable into three parts namely, outer tube, handle and inserts- 2
9	Unipolar curved Maryland dissecting and Grasping Forcep: Kelly curved dissecting and grasping forceps insulated, atraumatic, working length 36 cm, size: 5mm, dismantlable into three parts namely handle, insert and working tube. Handle without ratchet- 2
10	Insert Forcep Unipolar: Insert forcep only Maryland type curved atraumatic jaw compatible with main Kelley curved dissecting forceps- 1
11	Unipolar curved Right angle dissecting and Grasping Forcep: Kelly curved dissecting and grasping forceps insulated, atraumatic, working length 36 cm, size: 5mm, dismantlable into three parts namely handle, insert and working tube. Handle without ratchet- 2
12	Tooth Grasping Forcep; Grasping forceps — toothed 2x 3 teeth, Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 35-36cm, dismantling into three parts namely handle, insert and working tube. Handle with ratchet- 2
13	Grasping forceps- Allis , Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility into three parts namely handle, insert and working tube. Handle with ratchet- 1
14	Scissor curved Unipolar: METZENBAUM curved scissor, length of blade 12mm-15mm, connection for unipolar HF cable, dismantlable into insert, tube and handle. Working length 36 cm, size: 5mm, handle without ratchet- 2
15	Hook Scissor Hook scissor, with connection for unipolar HF cable, dismantlable into insert, tube and handle. Working length 36 cm, size: 5mm, handle without ratchet- 1
16	L Hook HF: L-shaped hook dissector with unipolar HF connection. Size 5 mm, length 36 cm (Approx)- 2
17	J Shape Hook -5 mm ,33 cm monopolar- 2
18	Debakay Forceps- 5 mm,33 cm (approx). rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 1
19	Alligator jaw forcep, 33cm (approx) rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 2
20	Spatula/Blunt HF dissector: Spatula/Blunt dissector with unipolar HF connection 5 mm, 35-36 cm (approx)- 1
21	Single action claw forceps, 10 mm, 35-36 cm (approx), double action jaw, rotating with connector pin for unipolar coagulation, dismantling facility into three parts namely handle, insert and working tube- 2
22	Spoon Forcep: Retrieval of foreign body/stones forcep, size 10mm without ratchet- 1
23	Heavy Duty Robust Bipolar Forcep length: 36cm, 5 mm rotating dismantlable, dismantling facility into three parts namely handle, insert and working tube preferably wide jaw with spare insert and handle Suitable bipolar HF cable 2 Nos. to be included along with it- 1
24	Bipolar HF Connecting cable- 4
25	Clip Applicator: Medium Large clip applicator dismantlable rotating size: 10mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip. It should be compatible with more than one brand. Dismantling facility into three parts namely handle, insert and working tube- 1

26	Clip Applicator: Large clip applicator dismantable rotating size: 10mm, length 36cm, for Titanium clips with ratchet to lock the jaw holding the clip. It should be compatible with more than one brand- 1
27	Haemolock clip applicator 10 mm size . It should be compatible with more than one brand- 1
28	Haemolock clip applicator 5 mm size. It should be compatible with more than one brand- 1
29	Washers , For 5 & 10 mm cannula and reducers- 10 Qty each size- 10 Qty each size
30	Two Way Suction irrigation cannula, size: 5mm&10mm each with special handle with trumpet control for irrigation and suction with silicon tubing- 1
31	Puncture Needle, size: 5mm, length 36cm, diameter 1.2 mm (approx)- 1
32	Needle Holder: Macro needle holder with tungsten carbide insert, ergonomic pistol handle, with disengageable ratchet, jaw curved to left, size: 5mm, length : 33cm for use with suture material size: 0/0 to 7/0- 2
33	Unipolar HF Cable: Unipolar HF cable suitable to connect with forcep and electrosurgical unit- 2
34	Myoma holding screw, 5 mm diameter and working length 30 cm- 1
35	Knot pusher and Knot tier. 5 mm diameter, working length of at least 30 cms. For knotting- 1
36	HP Hose: Suitable high pressure hose pin index to connect the gas to insufflator, length : 1.0 meter- 1
37	Suitable Autoclavable plastic tray double tray for sterilization and storage for hand instruments of minimum 20 hand instruments : Any good make- 2
38	Sterilization/Disinfection Tray: Disinfection/Sterilization tray with sieve tray to lift. Size: 27"x7"x5"(LxBxD) (Approx)- Any good make- 1
39	Formaline Chamber: Formaline Chamber made of Virgin Acrylic 4.5mm thickness; size:26"x8"x8"(LxBxH)(Approx)- Any good make- 1
40	CO2 Cylinder: D type----with hose pipe and regulator and connector 30 Kg- Any good make- 1
41	Carbon Dioxide bottle with pin index connection with wrench - Any good make- 2
42	SUCTION & IRRIGATION DEVICE: Compact suction and irrigation unit having Irrigation pressure not less than 400mmHg & Suction pressure not less than (-0.75mmHg). The unit should be supplied with 1.5 Litre glass bottle with bottle cap and stand; The unit should be supplied with 1.0 Litre irrigation bottle sterilizable in autoclave with bottle cap attachment to connect tubing. The unit should be supplied with reusable irrigation and suction silicon tubing set 2 Nos. each. Should be IEC 601-1, CE according to MDD- 1
43	Uterine elevator/manipulator :- Uterine elevator/ manipulator should have capability to maneuver uterus in to all directions like antivert- retrovert, Right site & left sight turn. It should provide effective compotonization. Outer ring should be made of high quality silicon material so that it should not damage energy source while colpotmization. It should provide minimum 3 different size of cup for use in case of different size of uterus to hold cervix. It should have mechanism to hold the cervix so that inside push can be possible and outside easy removal form patient is possible- 1
44	All instruments Should be USFDA or European CE approved
45	16. 3 year Warranty , 5 year CMC

Schedule No. 11- HAND INSTRUMENTS & ACCESSORIES for Hysteroscopic surgery

Sr. No.	Description of Technical Specification
1	Forward-Oblique Telescope 30°, enlarged view, diameter 2.9-3.0 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated.QTY-01,
2	Hysteroscope sheath for diagonostic continuous irrigation size 4.5-4.6mm outer sheath and 3.8-3.9mm inner sheath for use with 2.9-3.0mm hysteroscope telescope.QTY-01
3	Hysteroscope sheath for Operative continuous irrigation size 5.0-5.1mm outer sheath with operating channel 5Fr, leur lock adaptor and 4.3-4.4mm inner sheath for use with 2.9-3.0mm hysteroscope telescope. With stopcock & leur lock adaptor and inflow and outflow channel.QTY-01.
4	Scissors semi rigid, blunt tips, 5 Fr., length 33-36cm, single action jaws-- Qty 02,

5	Scissors semi rigid, pointed jaws, 5 Fr., length 33-36cm, single action jaws, semi-rigid ---Qty 02.
6	Biopsy- and Grasping Forceps semi rigid, 5 Fr. , length 33-36cm, double action jaws---Qty 02,
7	Unipolar Needle Electrode , 5 Fr., length 34 cm,-Qty 02,
8	Bipolar Dissection Electrode, 5Fr, 36cm, Bipolar---Qty 02 ,
9	High Frequency Cord with 4 mm plug HF-unit, length of cable should be minimum 300 cm ---Qty 01,
10	Bipolar High Frequency Cord, should fit in most of the standard electrosurgical unit having banana plug one side, length should be not less than 250cm- Qty-2
11	BIPOLAR WORKING ELEMENT SET:- BIPOLAR Working Element to be used with 22Fr Resectoscope sheath: Motion by means of a spring. The thumb support is movable. Return of the loop is controlled by the thumb and in rest position the electrode should rest inside the operating sheath, to be used with 2.9mm hysteroscopy telescope.
12	Should work in saline, BIPOLAR Cutting loop 21 Fr should work in saline, Cutting Electrode 21Fr, bipolar, pointed, should work in saline, Continuous Flow Resectoscope Sheath 22 Fr., including connection tubes for in- and outflow, 2 LUER-lock adaptors, 22Fr, oblique beak, fixed inner tube, with ceramic insulation, for use with working element , Continuous Flow Resectoscope Sheath 22 Fr., for Bi-Polar, including connection tubes for in- and outflow, 2 LUER-lock adaptors, 22Fr, oblique beak, rotating inner tube, with ceramic insulation, for use with working element. should work in saline, Obturator, for use with the Resectoscope sheath. QTY-01
13	CONTROLLED IRRIGATION AND SUCTION UNIT: FOR OPERATING HYSTEROSCOPE AND TCRE PROCEDURE TO MAINTAIN INTRAUTERINE CAVITY PRESSURE AS DESIRABLE BY SURGEON. PRESSURE OF IRRIGATION TO BE MAINTAINED BETWEEN:(PRESSURE 0-200mmHg).
14	FLOW TO BE MAINTAINED BETWEEN: (Flow 0-500ml/L.)SUCTION PRESSURE TO BE MAINTAINED BETWEEN:Suction controlled pressure between 0-(-50kPa)Should have foot switch for controlling various functions.consisting of: MAIN UNIT WITH DIGITAL DISPLAY, PUMP HEAD, INDICATOR AND PRESET AND ACTUAL VALUE FORPRESSURE, FLOW,SUCTION WITH SENSOR ATTACHMENT FOR REUSABLE DOME.AUTOMATIC DOME DETECTION FACILITY.
15	Should be supplied along with following accessories: HYSTEROSCOPE reusable Tubing Set, 2 Nos.Reusable Pressure dome 2 Nos.Suction bottle 5.0L 2 Nos.Suction bottle cap with stand , Suction tubing set reusable 2 Nos.,foot switch, 1 Nos., USFDA / European CE approved. QTY-01
16	All instruments Should be USFDA or European CE approved
17	16. 3 year Warranty , 5 year CMC

Schedule No. 12- 300MA High Frequency X-RAY MACHINE with Table

Sr. No.	Description of Technical Specification
I	High frequency X - Ray Generator
1	Frequency 40 KHz or more, output should be 30 KW or more
2	Max KVp 125
3	Max mA:300 or more.
4	Should have 300mA or more at 100kvp
II	X- Ray Tube
1	Type rotating anode
2	Focal spot Dual 1.2x1.2 mm and 2x2 mm or better.
3	Anode heat capacity : 115 KHU or more.
4	Rotating anode
5	Collimator with auto shut off facility.
III	Radiography
1	KV range 40 – 125
2	Small focus 1.2x1.2 mm or better

3	Large focus 2x2 mm or better
IV	Control Panel
1	Digital display of all radiographic parameters (KV & mAs)
2	KV Range: 40 to 125KV in steps of 1KV per step should be available.
3	Exposure Time Range: 10ms to 5secs or more in 20 steps or more should be available.
4	Automatic tube over load protection
5	Inbuilt automatic Electronic voltage compensation should be provided
6	Anatomical programming should be available.
V	Mechanical Specification
1	Floor to ceiling tube stand or ceiling free tube stand.
2	Fully counter balanced
3	Easy to move and handle
4	Light beam diaphragm collimator
5	One pair of high voltage cables at least 6 meters long
6	Tube head should be rotated 360 deg
7	Extendable hands switch with cable for x - Ray tube
VI	Table Specification
1	The table should be horizontal type
2	Table top should be radiolucent with negligible x-Ray absorption stain free break resistant and water proof
3	Bucky should be movable grid type
4	Grid should be aluminium interspaced with minimum ratio of 6:1 and 60 lines/inches
5	Bucky should travel the entire length of the table
6	Cassette tray should be of stainless steel auto centering /manual centering of cassette with cassette lock and should be capable to accommodate up to size 14"x17"
7	Compression band should be provided
Vii	Features
	The quoted model and tube should be AERB type approved for usage up to 300 mA or more relevant copies of the certificate should be attached with a bid. If x-ray tube is not approved by AERB, its specifications should be mentioned in the bid.
	Quality Assurance test should be provided at the time of installation according to AERB norms.
VIII	Standard Accessories
1	Three fold x - ray protection barrier
2	Lead apron 0.5 mm lead equivalence with thyroid guard - 1 no.
3	Light weight latest model cassettes with high speed screen 8 x 10, 10 x 12 and 12x15 – 1 nos each
4	Channel type hanger each size 5 nos
5	Should be supplied with chest stand cone for skull X- Rays
6	Dark room accessories should be provided inclusive of developing tank (4 nos.). Dark room lamp lead marker R,L,0-9 and A- Z each 2 sets
IX	Power Supply Requirements
	440± 10% VAC or 220±10% VAC
X	Specification of LEAD APRON
1	Should be AERB approved
2	should be light weight 0.5 mm lead equivalent.
3	should be heed and loop type (Velcro)

4	Should be supplied along with thyroid guard
XI	Specification for three Fold Lead protective barrier
1	Should be a threefold mobile lead protective barrier
2	Should be mounted on heavy duty casters
3	Should have 1.5 mm thick lead equivalence
4	The centre part should have 3 feet width and 6 feet height
5	The centre part should have 3 feet width and 6 feet height. The sides should be 1.5 feet width and 6 feet height
6	Should provide AERB approved protective accessories.
7	Lead door- 1.5 mm lead equivalent thickness.
XII	Approvals
	USFDA/CE(from notified body)/ISI and AERB approved
XIII	Training
	Onsite training at the hospital should be provide to radiographers and radiologists
	Addition-Ordering authority shall register themselves with ELORA. If order is placed without registration on ELORA than RC holder is not obligated to supply the machine and no penalty shall be imposed.
	Warranty- 3 years warranty
	CMC- 5 year CMC after 3 years warranty

Schedule No. 13- Pneumatic Tourniquet

Sr. No.	Description of Technical Specification
1	Dual Channel-
2	Ability to operate dual or one single bladder cuff during a procedure
3	Inflation time should be less than 10 seconds
4	It should have more than 4-hour, internal battery backup
5	It should be Small and Robust
6	Pump can be hung on any intravenous pole -saving floor space.
7	It should be easily transported from Emergency Room to Operating Room.
8	It should have digital display to see pressure and time on tourniquet.
9	Single port and Dual port option in cuff should be available.
10	Added- Should be supplied with reusable cuff 2 set of each size (small, medium & large)
11	It should be USFDA and CE approved.
12	Warranty- 3 years warranty
13	CMC- 5 year CMC after 3 years warranty

Schedule No. 14- Vessel sealing & Ultrasonic dissector system

Sr. No.	Description of Technical Specification
1	The ultrasonic dissector should have following features
2	Shears must be capable of dissecting, cutting and coagulating vessels upto 7 mm.
3	Cutting & coagulating with ultrasonic energy
4	Transducer for Lap and open surgery
5	Tissue gasping with using Parallel Jaw closure
6	Should be compatible with 5mm instruments
7	The system should have standby mode/safety mode.

8	Adjustable power setting.
9	The ultrasonic dissector should have following instrument to handle following open and laparoscopic surgery instruments such as :
10	Shears of 5mm thickness and shaft length 180 mm- 390 mm
11	Shears of 5mm thickness and shaft length 320mm-380mm
12	Shears of 5mm thickness and shaft length 90mm-170mm
13	Ultrasonic probes should be available for Open Lap & Onco Surgeries Compatible to quoted Vessel sealing & Ultrasonic dissector system.
14	Any ultrasonic probe equivalent to hook probe shall be acceptable irrespective of its dimension.
15	Cable for ultrasonic transducer -1no.
16	Ultrasonic transducer -1no.
17	Foot pedal for ultrasonic generator-1no.
18	European CE or USFDA approved
19	16. 3 year Warranty , 5 year CMC