

## राजस्थान चिकित्सा सेवा निगम

स्वास्थ्य भवन, सी-स्कीम, जयपुर

फोन नः 0141-2223887, फैक्स नः 0141-2228065

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क्रमांक : F-8 (M-1/)/RMSC/EPM//12-14/NIT-10/12/ 229

दिनांक: 20/12/12

### CORRIGENDUM

**Subject: - Amended technical Specifications and other conditions of Bid document after Pre-Bid dated 03.12.2012, for the tender of Equipment & Instruments, under NIT No F-8 (M-1/)/RMSC/EPM//12-14/NIT-10/12/135 dated 16.11.12 opening on dated 04.01.2013**

**Reference: - Pre Bid Conference held on 03.12.2012**

In Reference to above sited subject and NIT, The Technical Specification of items (Annexure-c) are here by Amended as below

S. No.	Existing Condition/ Technical Specification	Amended Condition/Revised Technical Specification
1.	<p><b>(1) TECHNIAL SPECIFICATIONS OF ITEM : 100MA X-RAY MACHINE (HIGH FREQUENCY FIXED X-RAY MACHINE)</b></p> <p><b>X-Ray Generator:-</b> Power output of generator should be 6 KW or more. Radiographic KV range should be 40 to 110 KVP or more. <b>mA (Rad):-</b> 100 mA or more. <b>mAs:-</b> 200 mAs or more <b>Control:</b> <b>KVP range:-</b> A very compact, soft touch control panel having following functions &amp; indications should be provided. Following features should be available on control panel.</p> <ul style="list-style-type: none"> <li>Machine ON/OFF switch.</li> <li>Digital Display of KV &amp; mAs increase &amp; decrease switches.</li> <li>KV &amp; mAs increase &amp; decrease switches.</li> <li>Ready &amp; X-Ray on switch with indicators.</li> <li>Self diagnostic programmed with indicators for Earth fault error, KV error, Filament error, Tube head Thermal error.</li> <li>A Dual action hand switch with retractable cord should be provided for radiation protection of operator.</li> </ul> <p><b>X-Ray Tube:-</b></p> <ul style="list-style-type: none"> <li>Rotating anode X-Ray Tube with dual focal spot &amp; thermally protected (specify focal spot)</li> <li>Collimator with auto shut off facility should be provided.</li> </ul> <p><b>Table:-</b></p> <ul style="list-style-type: none"> <li>Horizontal bucky table with floating table top with grid of 17 1/4"X18 3/4", grid ratio of 8:1 103 lines should be provided. The bucky tray should accept cassettes up to 14X17"</li> </ul> <p><b>Stand:-</b></p> <ul style="list-style-type: none"> <li>Tube stand from floor to ceiling should be provided.</li> </ul>	<p><b>(1) REVISED TECHNIAL SPECIFICATIONS OF ITEM : 100MA X-RAY MACHINE (HIGH FREQUENCY FIXED X-RAY MACHINE)</b></p> <p><b>X-Ray Generator:-</b> Power output of generator should be 6 KW or more. Radiographic KV range should be 40 to 110 KVP or more. <b>mA (Rad):-</b> 100 mA or more. <b>mAs:-</b> 200 mAs or more <b>Control:</b> <b>KVP range:-</b> A very compact, soft touch control panel having following functions &amp; indications should be provided. Following features should be available on control panel.</p> <ul style="list-style-type: none"> <li>Machine ON/OFF switch.</li> <li>Digital Display of KV &amp; mAs increase &amp; decrease switches.</li> <li>KV &amp; mAs increase &amp; decrease switches.</li> <li>Ready &amp; X-Ray on switch with indicators.</li> <li>Self diagnostic programmed with indicators for Earth fault error, KV error, Filament error, Tube head Thermal error.</li> <li>A Dual action hand switch with retractable cord should be provided for radiation protection of operator.</li> </ul> <p><b>X-Ray Tube:-</b></p> <ul style="list-style-type: none"> <li>Rotating anode X-Ray Tube with dual focal spot &amp; thermally protected (specify focal spot)</li> <li>Collimator with auto shut off facility should be provided.</li> </ul> <p><b>Table:-</b></p> <ul style="list-style-type: none"> <li>Horizontal bucky table with floating table top with grid of 17 1/4"X18 3/4", grid ratio of 8:1 103 lines should be provided. The bucky tray should accept cassettes up to 14X17"</li> </ul> <p><b>Stand:-</b></p> <ul style="list-style-type: none"> <li>Tube stand from floor to ceiling should be provided.</li> <li>The Company should provide one Vertical Bucky.</li> </ul> <p><b>Power Requirement:-</b></p> <ul style="list-style-type: none"> <li>The unit should be operable on 230 Volt AC, 50 Hz, 15 Amps with line.</li> </ul> <p><b>Other Requirements:-</b></p>



<ul style="list-style-type: none"> <li>The Company should provide one Chest Stand.</li> </ul> <p><b>Power Requirement:-</b></p> <ul style="list-style-type: none"> <li>The unit should be operable on 230 Volt AC, 50 Hz, 15 Amps with line.</li> </ul> <p><b>Others Requirements:-</b></p> <ul style="list-style-type: none"> <li>The Company should be ISO-9001:2008, ISO-13485:2003 Company.</li> <li>The Unit should be approved by AERB &amp; CE/BIS certified.</li> <li>The Company should a local service center.</li> <li>3 years comprehensive guarantee of complete unit including tube.</li> <li>Rates for AMC/CMC for 5 years after completing the 3 years comprehensive guarantee period.</li> </ul>	<ul style="list-style-type: none"> <li>The Company should be ISO-9001:2008, ISO-13485:2003 Company.</li> <li>The Unit should be approved by AERB &amp; CE/BIS certified.</li> <li>The Company should a local service center.</li> <li>3 years comprehensive guarantee of complete unit including tube.</li> <li>Rates for AMC/CMC for 5 years after completing the 3 years comprehensive guarantee period including tube.</li> <li>Demonstration may be taken if required.</li> </ul>
<p>2. (2) <b><u>TECHNIAL SPECIFICATIONS OF ITEM : CR SYSTEM – SINGLE PLATE READER TYPE FOR DIGITAL RADIOGRAPHY</u></b></p> <ol style="list-style-type: none"> <li>Digitizer (CR) system should have capacity to process more than 70 or more cassette/films per hour.</li> <li>Standard work station (Console) coupled with CR image storage capacity – at least 2000 images specify the numbers. It should have a resolution of 6 pixels/mm(Minimum) for standard resolution cassette &amp; up to 20 pixels/mm or more</li> <li>Separate DICOM workstation in ultra modality with all processing facilities in a centralized reporting.</li> <li>Other feature of CR system <ol style="list-style-type: none"> <li>Image post processing.</li> <li>Window leveling</li> <li>Annotation</li> <li>Area of interest Zoom</li> <li>Magnification</li> <li>Flipping &amp; panning</li> <li>Automatic exposure correction</li> <li>Pre view software</li> <li>Edge enhancement stepwise</li> <li>Contrast/ Brightness adjustment</li> <li>Shuttering / ROI Finder</li> <li>Application related software like Pediatric should be available- The system should have software &amp; hardware to perform full leg/Full spine/Long Body imaging/ imaging stitching</li> <li>DICOM Print</li> <li>DICOM image output to network workstation</li> <li>Grid Pattern removal software &amp; noise compression processing</li> <li>Gray Scale reversal</li> <li>Rotation</li> <li>Image preview time 25 to 60 Sec.(For large image)</li> <li>System should be fully compliant with DICOM 3</li> <li>Automatic cassette identification e.g. through bar code reader.</li> </ol> </li> <li>Dry Imaging camera with at-least two or more film size on line 14" X 17" , 11" X 14" /10" X 14", 10" X 12" &amp; 8" X 10" .</li> <li>Contrast spatial / Reading resolution 10 pixel / mm or more constant high resolution in all sizes. True size printing should be possible from reader</li> </ol>	<p><b><u>REVISED TECHNIAL SPECIFICATIONS OF ITEM : CR SYSTEM – SINGLE PLATE READER TYPE FOR DIGITAL RADIOGRAPHY</u></b></p> <ol style="list-style-type: none"> <li>Digitizer (CR) system should have capacity to process more than 70 or more cassette/films per hour of 14 X 17" size.</li> <li>Standard work station (Console) coupled with CR image storage capacity – at least 2000 images specify the numbers. It should have a resolution of 5 pixels/mm (Minimum) for standard resolution cassette &amp; up to 20 pixels/mm or more.</li> <li>Separate DICOM workstation in ultra modality with all processing facilities in a centralized reporting.</li> <li>Other feature of CR system <ol style="list-style-type: none"> <li>Image post processing.</li> <li>Window leveling</li> <li>Annotation</li> <li>Area of interest Zoom</li> <li>Magnification</li> <li>Flipping &amp; panning</li> <li>Automatic exposure correction</li> <li>Pre view software</li> <li>Edge enhancement stepwise</li> <li>Contrast/ Brightness adjustment</li> <li>Shuttering / ROI Finder</li> <li>Application related software like Pediatric should be available- The system should have software &amp; hardware to perform full leg/Full spine/Long Body imaging/ imaging stitching</li> <li>DICOM Print</li> <li>DICOM image output to network workstation</li> <li>Grid Pattern removal software &amp; noise compression processing</li> <li>Gray Scale reversal</li> <li>Rotation</li> <li>Image preview time 25 to 60 Sec.(For large image)</li> <li>System should be fully compliant with DICOM 3</li> <li>Automatic cassette identification e.g. through bar code reader.</li> </ol> </li> <li>Laser camera with at-least three film size on line 14" X 17", 11" X 14" /10" X 14", 10" X 12" &amp; 8" X 10" .</li> <li>Contrast spatial / Reading resolution 10 pixel / mm or more constant high resolution in all sizes. True size printing should be possible from reader console Automatic exposure correction &amp; facility for maneuvering reading sensitivity manually. Gamma curves for multiple object intensity processing. Registration &amp; cassette identification should be possible to be done before &amp; after the exposure (Pre/ Post registration)</li> <li><b>Specification for Laser Camera</b></li> </ol>



console  
Automatic exposure correction & facility for maneuvering reading sensitivity manually.  
Gamma curves for multiple object intensity processing.  
Registration & cassette identification should be possible to be done before & after the exposure (Pre/ Post registration)

7. **Specification for Laser Camera**

1. Mention Spatial resolution higher level preferable **minimum 500 DPI/PPI**
2. Mention Gray Scale resolution : more than 12 bits preferable
3. Mention Processing capacity/hour for (14" X 17") films , It should be more than 70 films/Hour

8. **Acceptable film size:** 14" X 17", 11" X 14" /10" X 14", 10" X 12" & 8" X 10"etc.

1. Online film sizes : **at least two or more film size**
2. DICOM compatible

9. **CR workstation should have following feature**

1. Multiple image printing with multiple format
2. Measurement of image, insert scale
3. Preloaded annotation
4. DICOM CD writing & reading
5. Image inverse, image flipping, image magnification , zooming
6. addition of patient's photograph on image
7. Reporting format
8. Image preview
9. image cropping
10. Printing multiple patient on one film
11. CD writing for multiple patient on one CD
12. Should have a hard disk of 80GB or more for storing image

10 **Please provide cassette for CR with PSP Plate (IP)**

14" X 17"  
14" X 14"  
10" X 12"  
8" X 10"

Two cassette of each size should be supplied

- 1 Suitable online UPS more than 30 minutes backup for whole system.
- 2 Reputed make 1.5 ton split A/C
- 3 Comprehensive 3 year guarantee of CR, imaging screens cassette and camera – whole system including A/C,
- 4 Spares & consumable parts should be available for 10 years
- 5 Installation list & company should have service center in Rajasthan.
- 6 AMC/CMC for 5 years, after completion of 3 year guarantee period.
- 7 Firm should attach installation list in India of the model quoted out of which at least two installations should be in Govt. Hospital/ Govt. medical College institution.

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2. Mention Gray Scale resolution : more than 12 bits preferable
3. Mention Processing capacity/hour for (14" X 17") films , It should be more than 70 films/Hour

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3.

**(3) TECHNIAL SPECIFICATIONS OF ITEM : HIGH FREQUENCY 300MA X RAY MACHINE**

**X-Ray Generator: -**

High frequency X ray generator.

Output: - 25 KW or more.

**Minium Desired Rating**

**mAs:** - 200mAs or more

**Rad KVP range:** - Specify

**Rad mA-** 300 mA or more

**X ray Tube:-** dual focus, rotating anode tube, rating should be mentioned.

Rotating Anode type with one no. manual collimator should be provided

Control panel Should consist of :-

- Digital/electronic display of Kv & mAs
- KV increase & decrease switches
- mAs increase & decrease switches
- Small & large focal spot selection switch.
- Machine ON/OFF switch.
- Collimator Lamp 'ON' Switch.
- Stand by & exposure release switch.
- Self diagnostic programmed with indicators for :-
  - Earth fault error.
  - KV error.
  - Filament error
  - Tube head Thermal error
- X ray on indicator.
- Incoming voltage indicator.

A hand switch with dual action for exposure realease with retractable cord for radiation protection to the operator.

**Stand:** - Floor to ceiling stand & with counter balanced tube head mounted on floor celing rails for convenient movement.

**Table:-**

Standerd horizontal bucky table should be for over couch and bucky radiography or various body parts the table should consisit of motorized reciprocating bucky with grid ratio of 6:1 or more ,60 lines per inches or more tray provided. It should travel almost entire length of the table & can be locked at an desired position .The table top should be made of low radiation absorption, water proof material with compression band (Immobilizing Device)

**Accessories:-**

- Three panel x ray protective barrier for operator with lead glass window in the control panel
- One pair of light lead apron for protection of operator

**Power requirement: -**

415 Volt AC Current, 50 Hz, 15 Amps (with line resist less then 0.4 ohms line regulation+/- 10%) 3 Phase should be available there.

**Others terms & conditions:**

- Guarantee of machine – 3 years from the date of installation including tube
- The company should be ISO & CE Certified.
- The Unit should be Type approved from AERB.
- The company should a local service center in Rajasthan.
- Response Time: - Downtime of machine should not be more then 5% per year. In case of breakdown response/repair should be completed with in 72 hours failing which a penalty of

**(3) REVISED TECHNIAL SPECIFICATIONS OF ITEM : HIGH FREQUENCY 300MA X RAY MACHINE**

**X-Ray Generator: -**

High frequency X ray generator.

Output: - 25 KW or more.

**Minium Desired Rating**

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**Accessories:-**

- Three panel x ray protective barrier for operator with lead glass window in the control panel
- One pair of light lead apron for protection of operator.
- One Vertical Bucky.

**Power requirement: -**

415 Volt AC Current, 50 Hz, 15 Amps (with line resist less then 0.4 ohms line regulation+/- 10%) 3 Phase should be available there.

**Other terms & conditions:**

- Guarantee of machine – 3 years from the date of installation including tube.
- The company should be ISO & CE Certified.
- The Unit should be Type approved from AERB.
- The company should have a local service center in Rajasthan.
- Response Time: - Downtime of machine should not be more then 5% per year. In case of breakdown response/repair should be completed within 72 hours failing which a penalty of Rs.5000 per day will be charged from the supplier.
- Company will quote AMC & CMC charges for 5 years



	<p>Rs.5000 per day will be charged from the supplier.</p> <ul style="list-style-type: none"> <li>Company will quote AMC &amp; CMC charges separately after completion of 3 years of Guarantee.</li> <li>Minor electrical /civil work for functioning of the machine in the room if any will be the responsibility of the supplier.</li> </ul>	<p>separately after completion of 3 years of Guarantee including tube.</p> <ul style="list-style-type: none"> <li>Minor electrical /civil work for functioning of the machine in the room if any will be the responsibility of the supplier.</li> <li>Demonstration may be taken if required.</li> </ul>
4.	<p><b>(4) TECHNIAL SPECIFICATIONS OF ITEM : PRECISION SPIROMETER (PORTABLE)</b></p> <p><b>For the measurement of:</b></p> <ul style="list-style-type: none"> <li>Spirometry &amp; Flow Volume Parameters,</li> <li>Maximum Ventilation Volume,</li> <li>Lung Volumes &amp; Sub-divisions,</li> <li>Pre &amp; Post Bronchodilator comparison,</li> </ul> <p>Incorporates Precision Pneumotachograph : <b>Minimum Flow Range: + 0-14 L/Sec (Linear)</b> Resistance: 0.5 cm H<sub>2</sub>O/L/Sec. Accuracy &lt; 3% (Should meet Criteria of ATS Standards), Parameters should be measured with highest accuracy &amp; reproducibility and accuracy not effected with Humidity, Moisture &amp; Water droplets. Should incorporate Electronic Barometer &amp; Temperature Sensors, for Automatic BTPS Correction. Overlaying of previous test curves for comparison. Real Time Flow Volume and Volume traces on Screen. Capability to select and modify predicted equations. Facility to interface for desktop/Laptop computer. System software should be based on Windows Operating System. Should be supplied with computer interfacing package, Cables, Software, 3 Litre Calibration Syringe, Standard accessories &amp; Manual. Additional Accessories : Pneumotach Screens (05 Nos), Pulmonary Filters (50 Nos), Disposable Mouthpieces (250 Nos), Display screen or Laptop Computer - 2 GB RAM, 14" TFT Screen, USB Ports, DVD R/W, Hard Disc Drive (1x 320 Gbyte), Desk Jet Printer, UPS. Battery backup more than 2 hours.</p>	<p><b>(4) REVISED TECHNIAL SPECIFICATIONS OF ITEM : PRECISION SPIROMETER (PORTABLE)</b></p> <p><b>Instrument should measure</b></p> <ul style="list-style-type: none"> <li>Spirometry &amp; Flow Volume Parameters,</li> <li>Maximum Ventilation Volume,</li> <li>Lung Volumes &amp; Sub-divisions,</li> <li>Pre &amp; Post Bronchodilator comparison,</li> <li>Real Time Flow Volume and Volume Traces on Computer Screen.</li> </ul> <p><b>Required Features :</b></p> <ol style="list-style-type: none"> <li>Incorporates Precision Pneumotachograph :</li> <li>Should meet Criteria of ATS Standards: <ol style="list-style-type: none"> <li>Minimum Flow Range: + 0-14 L/Sec (Linear)</li> <li>Resistance: 0.5 cm H<sub>2</sub>O/L/Sec.</li> <li>Accuracy = Error less than 3%</li> </ol> </li> <li>Parameters should be measured with highest accuracy &amp; reproducibility and accuracy not effected with Humidity, Moisture &amp; Water droplets.</li> <li>Should incorporate Electronic Barometer &amp; Temperature Sensors, for Automatic BTPS Correction.</li> <li>Overlaying of previous test curves for comparison.</li> <li>Capability to select and modify predicted equations.</li> <li>Facility to interface for desktop/Laptop computer.</li> <li>System software should be based on the latest Micro Soft Windows Operating System and should be compatible to run on Windows 2008.</li> <li>Laptop Computer (HP/Dell/Compaq/lenovo)- 2 GB RAM, at least 14" TFT Screen, USB Ports, DVD R/W, Hard Disc Drive (1x320 Gbyte).</li> <li>HP/Canon/Epson Deskjet printer and good quality UPS.</li> <li>Should be supplied with computer interfacing package, Cables, Software, 2/3 Litre Calibration Syringe as per requirement of the instrument, Standard accessories, Manual and a Strong Carrying Case.</li> <li>Additional Accessories: Pneumotach Screens (05 Nos), Pulmonary Filters (50 Nos), Disposable Mouthpieces (250 Nos) and nose clip.</li> <li>Battery backup of more than 2 hours.</li> <li>Instrument should conform to and certified by ISO/CE/USFDA.</li> <li>CAMC for 5 years after completion of 3 years guarantee period.</li> <li>The assemblage (Spirometer and laptop) should be portable.</li> </ol>
5.	<p><b>(5) TECHNIAL SPECIFICATIONS OF ITEM : BLOOD CELL COUNTER (THREE PART AUTOMATIC HEMATOLOGY ANALYZER)</b></p> <ol style="list-style-type: none"> <li>3 part fully automated hematology analyzer with 19 parameters WBC, LYMPHOY#, MID#, Gran/Neut#, LYMPHOY%, MID%, Gran/Neut%, RBC, HB, MCH, MCHC, HCT, MCV, RDW-SD/CV, PLT, PCT, MPV, PDW, P-LCR.</li> <li>Instrument should have double chamber for sample analysis.</li> <li>WBC, RBC &amp; PLT (3) Histograms.</li> <li>Through Put 60 sample/hr.</li> </ol>	<p><b>(5) REVISED TECHNIAL SPECIFICATIONS OF ITEM : BLOOD CELL COUNTER (THREE PART AUTOMATIC HEMATOLOGY ANALYZER)</b></p> <ol style="list-style-type: none"> <li>It should be 3 part fully automated hematology analyzer with 18 parameters (WBC, RBC, Hb, HCT, MCV, MCH, MCHC, RDW, PLT, MPV, PCT, PDW, Gr% Gr#, Ly%, Ly#, Mo%, Mo# with three histogram). Histogram interpretation booklet of the same company for model quoted should be provided.</li> <li>Method – Principal of cell counting by impedance and selective lysing – Hb by cyanide free liquid, photometry</li> </ol>



5. Hemoglobin by cyanide free method.
6. Sample volume should be less than 100 micro Lt. for all 19 parameters including Pediatric samples.
7. Should be based on pressure & syringe/SRV Technology.
8. Automatic cleaning of sample probe.
9. Various alarms for errors & maintenance.
10. An online 0.5KVA UPS with 30 minute back up should be supplied with equipment.
11. Should have RS 232/USB port for data transmission & storage minimum 500 patient results.
12. Output Should be inbuilt thermal recorder, external printer (optional) & interface for computer.
13. The instrument should be open/close system without any barcode reader/card for reagent management systems, department should not be bound to purchase any monopoly/ proprietary based consumable and Reagent, and free to purchase any compatible and economic without effecting service & warranty.
14. Service should be provided within 24 hours by the engineers based at various cities in Rajasthan.
15. Instrument should be CE/USFDA/ISO certified.
16. CAMC for five years, after expiry of three years Guarantee period.
17. Free reagents for startup (with standard pack size, minimum of 800 tests).
18. Operation Manual & Service manual Must be provided at the time of Installations.

3. Instrument should have dual chamber for RBC & Platelets, WBC & Hb.
  4. Sample volume range less than 100µl whole blood.
  5. Through put 60 samples/hrs. Use only 3 reagents diluents, lyse, cleaner with automated cleaning of sample probe and reagents should be in compact pack.
  6. It should have inbuilt printer. Facility for external printer should be provided.
  7. It should be US-FDA approved/CE98/79/CE directive or ISO 13485:2003.
  8. The firm should have their own quality control and calibrators and extensive QC features.
  9. Firm must have various zonal office at District based engineer in Rajasthan. Service should be provided within 24 hrs of breakdown call. List of engineers together with their contact numbers working in Rajasthan only should be given.
  10. 0.5KVA UPS with 30 minutes backup should be supplied with equipment.
  11. Firm should submit list of user of quoted model in Rajasthan particularly from reputed Lab/Govt. Lab performance report can also be considered.
  12. It should have USB port/RS 232 port for data transmission.
  13. Equipment should be pest proof.
  14. Cost of reagents of start up, shutdown per cycle. Per test cost should be mentioned separately and shall be considered separately from cost of equipment should be mentioned in financial bid.
  15. Cost of controls should be given separately in financial bid.
  16. CMC for 5 yrs after expiry of 3 yrs comprehensive warranty period – Either manufactures or its sole importer in India can quote the tender. Certificate of authorization should be enclosed.
  17. Free reagents for start up of standard pack size should be provided, with a set of controls with the equipment at time of installation.
  18. Operation manual and service manual must be provided at the time of installation.
- Note – Each firm should provide original Brochure for the equipment with detail specification. Other features should be on letter head of the company not from distributor.

6. **(6) TECHNICAL SPECIFICATIONS OF ITEM :  
SINGLE CHANNEL ECG MACHINE**

S. No.	Specification
<b>Fully automatic, microprocessor controlled, Single-channel resting electrocardiograph, mains and battery operated</b>	
<b>Standard unit including :</b>	
1.	12 lead simultaneous ECG data acquisition
2.	High-resolution built-in thermal printer
3.	Sensitivity : 2.5, 5, 10, 20 mm/mV
4.	Should have Membrane keypad for operating
5.	Printout on 50 mm or more Z fold paper
6.	Battery should last minimum up to 200 recordings
7.	ECG measurements, Copy Function
8.	Auto & Manual Mode
9.	Printing Mode : Auto simultaneous acquisition, with parameter calculation and Manual Real Time Should be supplied with USB & Software for storage of ECG on Computer

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<b>Fully automatic, microprocessor controlled, Single-channel resting electrocardiograph, mains and battery operated</b>	
<b>Standard unit including :</b>	
1.	12 lead simultaneous ECG data acquisition
2.	High-resolution built-in thermal printer
3.	Sensitivity : 2.5, 5, 10, 20 mm/mV
4.	Should have Membrane keypad for operating
5.	Printout on 50 mm or more Z fold paper or roll type paper
6.	Battery should last minimum up to 200 recordings
7.	ECG measurements, Copy Function
8.	Auto & Manual Mode
9.	Printing Mode : Auto simultaneous acquisition, with parameter calculation and Manual Real Time Should be supplied with USB & Software for storage of ECG on Computer
<b>Standard accessories included :</b>	



<p><b>Standard accessories included :</b></p> <table border="1"> <tr><td>1.</td><td>Patient Cable: 10 lead</td></tr> <tr><td>2.</td><td>Recording paper - 1</td></tr> <tr><td>3.</td><td>Clip-on Electrode - 4</td></tr> <tr><td>4.</td><td>Jelly Bottle - 1</td></tr> <tr><td>5.</td><td>Chest Electrode with Bulb - 6</td></tr> <tr><td>6.</td><td>Earth Cable - 1</td></tr> <tr><td>7.</td><td>Warranty Card</td></tr> <tr><td>8.</td><td>Operating manual</td></tr> </table>	1.	Patient Cable: 10 lead	2.	Recording paper - 1	3.	Clip-on Electrode - 4	4.	Jelly Bottle - 1	5.	Chest Electrode with Bulb - 6	6.	Earth Cable - 1	7.	Warranty Card	8.	Operating manual	<table border="1"> <tr><td>9.</td><td>Patient Cable: 10 lead</td></tr> <tr><td>10.</td><td>Recording paper - 1</td></tr> <tr><td>11.</td><td>Clip-on Electrode - 4</td></tr> <tr><td>12.</td><td>Jelly Bottle - 1</td></tr> <tr><td>13.</td><td>Chest Electrode with Bulb - 6</td></tr> <tr><td>14.</td><td>Earth Cable - 1</td></tr> <tr><td>15.</td><td>Warranty Card</td></tr> <tr><td>16.</td><td>Operating manual</td></tr> </table>	9.	Patient Cable: 10 lead	10.	Recording paper - 1	11.	Clip-on Electrode - 4	12.	Jelly Bottle - 1	13.	Chest Electrode with Bulb - 6	14.	Earth Cable - 1	15.	Warranty Card	16.	Operating manual
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<p>7. <b>(7) TECHNICAL SPECIFICATIONS OF ITEM :DENTAL CHAIR WITH DENTAL X-RAY MACHINE</b>  <b>ELECTRICALLY OPERATED DENTAL CHAIR AND UNIT</b>  1. Electrically Operated micro processor based multi programmable Dental Chair.  2. The Chair should have Erasable Programs with Microprocessor controlled, where Doctor can set his own programs. The Program switch should be fitted to the instrument Tray. Program 0 and Gargling. 1 &amp; 2 erasable Program  3. Perfectly body contoured chair  4. The Right side Arm of the Chair has lateral rotation for easy access of the Patient.  <b>Chair Mount Unit fitted with:</b>  a) LED Light with 3 intensity with 3 axis movement, 40,000 to 45,000 Lux , maximum power consumption should be 4 to 6 watts.  • On/off by sensor switch non-touch  • 3 step Intensity control by non-touch sensor  b) Auto water connection for Spittoon and Tumbler. Total basin cover should be single piece high quality porcelain with perfect smooth spittoon    <b>STAINLESS STEEL INSTRUMENT TRAY</b>  for keeping instruments.  d) LED X-RAY VIEWER  e) High &amp; low vacuum motorized suction with flow control valve, auto drain &amp; auto flush system.  <b>Modular fitted with:</b>  i) <b>A. AIROTOR</b> 1Nos  ii) <b>Air rotor handpiece clean head with a speed of 3,50,000 RPM(Kavo/ NSK/ Sirona/ W&amp;H)1No.</b>  iii) Airtor unit with Control box fitted with transparent Regulated water tank, foot control. Supplies with Titanium/SS Airtor Torque Hand piece with cellular optic light, Ultra push type non-retraction valve    <b>B. Brushless Micromotor</b> (Kavo/ NSK/ Sirona/ W&amp; H)    Micro motor Brushless Speed range 2000-40,000 RPM With digital display of speed should be supplied with:  i) Contrangle Hand piece Autoclavable speed 40,000 RPM(Kavo/ NSK/ Sirona/ W&amp; H) 1 Nos</p>	<p><b>(7) REVISED TECHNICAL SPECIFICATION FOR ITEM: ELECTRICALLY OPERATED DENTAL CHAIR AND UNIT and DENTAL X-RAY AFTER PRE-BID dated 3/12/2012.</b>  1. Electrically Operated micro processor based multi programmable Dental Chair with both left and right handed dentistry option.  <b>Dental Chair and Unit should have certification from European CE/ USFDA and ISO 9001:2008 and ISO 13485:2003.</b>  2. The Chair should have Erasable Programs with Microprocessor controlled, where Doctor can set his own programs. The Program switch should be fitted to the instrument Tray. Program 0 and Gargling. 1 &amp; 2 erasable Program  3. Perfectly body contoured chair  4. The Right side Arm of the Chair has lateral rotation for easy access of the Patient.  <b>Chair Mount Unit fitted with:</b>  a) LED Light with 3 intensity with 3 axis movement, <b>25,000 to 40,000</b> Lux, maximum power consumption should be 4 to 6 watts.  • On/off by sensor switch non-touch  • 3 step Intensity control by non-touch sensor  b) Auto water connection for Spittoon and Tumbler. Total basin cover should be single piece high quality porcelain with perfect smooth spittoon <b>with removable and autoclavable cannula for better hygiene.</b>  c) <b>STAINLESS STEEL INSTRUMENT TRAY</b> for keeping instruments.  d) <b>LED X-RAY VIEWER</b>  e) High &amp; low vacuum motorized suction with flow control valve, auto drain &amp; auto flush system.  <b>Modular fitted with:</b>  <b>A. AIROTOR</b> 1Nos  i) Air rotor handpiece clean head with a speed of 3,50,000 RPM(Kavo/ NSK/ Sirona/ W&amp;H) 1Nos  ii) Airtor unit with Control box fitted with transparent Regulated water tank, foot control. Supplies with Titanium/SS Airtor Torque Hand piece with cellular optic light, Ultra push type non-retraction valve  <b>B. Brushless Micromotor for Clinical Use</b> (Kavo/ NSK/ Sirona/ W&amp; H)    Micro motor Brushless Speed range 2000-40,000 RPM With digital display of speed should be supplied with:  i) Contrangle Hand piece Autoclavable speed 40,000 RPM(Kavo/ NSK/ Sirona/ W&amp; H) 1 Nos  ii) Straight Hand piece, Autoclavable speed 40,000 RPM(Kavo/ NSK/ Sirona / W&amp; H) 1 Nos</p>																																



ii) Straight Hand piece, Autoclavable speed 40,000 RPM (Kavo/ NSK/ Sirona / W& H) 1 Nos

C. **3 Way Syringe for Air , Water & Spray** 2 Nos

One for Doctor and one for Assistant

D. **Ultrasonic Scaler**

1 Nos

Piezotronic Scaler 28,000- 32000 Khz frequency. Autoclavable Handpiece total control is micro processed based control unit. Handpieces most sleek. The scaler is supplied with: Piezotronic Scaler with 4 tips (EMS /Satelac /NSK/W&H)

E. **LED LIGHT CURE UNIT**

1 No

Ensures up to 1300mW/sq.cm, with 4 curing modes (RAMP, Fast, Long , Pulse) . It should be with powerful Li-ion battery with increased capacity. Ensures upto 4,000 Sec work.

Air Compressor

- Oil-free, Medical Grade, Noise free 0.75 HP Compressor.

The Compressor should be fitted with:

- Built-in Thermo cut-off to save the motor during excess of heat.
- **Auto head Air Release Valve.**
- **Automatic Cut-off.**
- **Safety Release Valve.**
- **Drain Valve.**
- **Pressure Gauge.**
- **The Inner surface of the Compressor Tank is coated with Epoxy to prevent rusting.**

Dental Operators Stool

Should be latest Surgical Stool having rising and lowering by pneumatic piston with chromium plated legs (Stool frame made of strong rust proof material). Back rest should move forward and backward along with the body by pneumatic piston and it should give support all the time. The seat should have a piston to move with the body when a Surgeon leans forward.

Moving on five wheels with Euro molded seat, back rest, pneumatic system for upward and downward movements.

Suction Apparatus

Should be made up of steel epoxy coated fitted with oil immersed motorized vacuum pump with two graduated suction jars each of 1.5 Litre capacity with synthetic rubber Lids, long pressure tubing, vacuum control, automatic overflow cut off device, should be mounted on rubber wheels.

**VALIDATION FOR COMPANY'S NAME BE MENTIONED:**

*Airotor / Micromotor / Scaler*

*These are the vital compliment in the dental unit. Earlier days before the global economy only leading Companies which are established to do business in India. When the economy opening unknown sub-standard product have made the way to the Indian market specially because we in our country like other country no registration & standardization procedure.*

*Keeping all these in view we have specified 4 to 5 company's product because these are the global leaders branded item. They are in the market globally for more*

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Dental Operators Stool

Should be latest Surgical Stool having rising and lowering by pneumatic piston with powder coated legs (Stool frame made of strong rust proof material). Back rest should move forward and backward along with the body by pneumatic piston and it should give support all the time. The seat should have a piston to move with the body when a Surgeon leans forward.

Moving on five wheels with Euro molded seat, back rest, pneumatic system for upward and downward movements.

Suction Apparatus (additional apart from main unit)

Should motorized suction with auto flush and auto drain system, be made up of steel epoxy coated fitted with oil immersed motorized vacuum pump with two graduated suction jars each of 1.5 Litre capacity with synthetic rubber Lids, long pressure tubing, vacuum control, automatic overflow cut off device, should be mounted on rubber wheels.

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*Keeping all these in view we have specified 4 to 5 company's product because these are the global leaders branded item. They are in the market globally for more than 40 to 50 years in India. They have a total quality which is well approved in the private market. These are the brands which satisfied 99% of the private practices and they are all backed up by local service. No doubt, if we specify single Company name it is against the law of monopoly practice. Since we have given the wide selection, we are sure that we should have one of these products for smooth working.*





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## 2. DENTAL X-RAY UNIT 70 KV, 7 to 8mA

- ◆ 70 KV , 7 to 8mA, digital timer with the Scissor Arm
- ◆ High Frequency
- ◆ Dental X-ray with Dental Arch timer having 32 Teeth to identify the individual teeth requirement
- ◆ Mode for Adult ,Children & RVG

Specification:

1) Operating Voltage: 220 – 230 VAC - 50 HZ (+/- 10%)

2) Exposing Time : 2 Secs. Max. / 0.1 Sec. (Min.)

Features:

- Digital Display provided for Exposure Time setting.
- Separate Hand operated Switch is provided for the remote Control of X-Ray Exposure.
- Easy Exposure time set control by soft touch buttons.
- Automatic Power cut-off at low / High Voltage as a Safety measure for X-ray Tube Head.
- Microprocessor based Controller for setting accurate Exposure time.

X-Ray Tube Angulations:

X-ray Tube can be moved to any position convenient to the patient with the help of Arm and Hinge arrangements. The X-ray Tube can also be rotated around its axis both Vertically (270 Degree) and Horizontally (360 Degree) to help selection of correct angulation.

Technical Data:

Frequency	:	50 / 60 HZ
Input current	:	220 / 240 V
Tube Voltage	:	70 KV
Anodic Current	:	6 to 8 mA
Total Filtration	:	2 mm Al
Focal Film Dis	:	20 Cms.
Focal Spot	:	1 (IEC-336)

**Note:** It is very important; X-Ray should have the BIS/CE/ FDI Mark for the specific Model offered.

The Unit should be provided with DAYLIGHT DEVELOPING SYSTEM:

Manual Day-Light X-ray Developer : It is a compact Developing System with Viewing Window. The total body construction is of Non-corrosive Fiber Glass.

Supplied with:

- a) Non Corrosive Tanks for Solution - 3 Nos.
- b) Hanger of 10 Clips - 1 No.
- c) Loose clips - 5 Nos.

## 2. DENTAL X-RAY UNIT 70 KV, 6 to 8mA

- ◆ 70 KV , 6 to 8mA ( AERB approved), digital timer with the Scissor Arm
- ◆ High Frequency/ DC
- ◆ Dental X-ray built in automatic Arch timer and time can be adjusted manually, if required.
- ◆ Mode for Adult ,Children & RVG

Specification:

1) Operating Voltage: 220 – 230 VAC - 50 HZ (+/- 10%)

2) Exposing Time : 2 Secs. Max. / 0.1 Sec. (Min.)

Features:

- Digital Display provided for Exposure Time setting.
- Separate Hand operated Switch is provided for the wireless remote control of X-ray exposure.
- Easy Exposure time set control by soft touch buttons.
- Automatic Power cut-off at low / High Voltage as a Safety measure for X-ray Tube Head.
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Focal Spot	:	1 (IEC-336)

**Note:** It is very important; X-Ray should have the BIS/European CE/ FDI Mark for the specific Model offered.

AERB certificate for the specific Model is must.

The Unit should be provided with DAYLIGHT DEVELOPING SYSTEM:

Manual Day-Light X-ray Developer : It is a compact Developing System with Viewing Window. The total body construction is of Non-corrosive Fiber Glass.

Supplied with:-

- a) Non Corrosive Tanks for Solution - 3 Nos.
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9

Estimated quantity of equipment & instrument shown on page no. 7 of tender document for these items.

S. N.	Name of Equipment & Instruments	Total estimated Quantity for R/C (In no.)
1	2	3

Revised estimated quantity of equipment & instrument as below in reference to page no. 7 of tender document for these items.

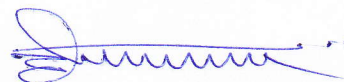
S. N.	Name of Equipment & Instruments	Total revised estimated Quantity for R/C (In no.)
1	2	3



1	100MA X-RAY MACHINE (HIGH FREQUENCY FIXED X-RAY MACHINE)	60	1	100MA X-RAY MACHINE (HIGH FREQUENCY FIXED X-RAY MACHINE)	115
2	BLOOD CELL COUNTER (THREE PART AUTOMATIC HEMATOLOGY ANALYZER)	67	2	BLOOD CELL COUNTER (THREE PART AUTOMATIC HEMATOLOGY ANALYZER)	159
3	SINGLE CHANNEL ECG MACHINE	117	3	SINGLE CHANNEL ECG MACHINE	130
4	DENTAL CHAIR WITH Dental X-RAY MACHINE	50	4	DENTAL CHAIR WITH Dental X-RAY MACHINE	100

**Note:-** The above revised estimated quantity is only indicative and may vary substantively. The supply order shall be placed as per commitment of firm for supplies to RMSC in ANNEXURE-E and clause-18.

Please note that above all Amendments in technical Specifications/bid conditions is the integral part of Annexure-C and tender document. This corrigendum shall be signed and annexed with tender document.



**Executive Director (EPM)**  
**RMSC, Jaipur**