Immunology Section

Technical specifications of CO₂ incubator

- Microprocessor controlled stackable CO₂ incubator
- Capacity= 150-200 L.t.
- Temperature range= 10°C below ambient to 50°C with accuracy ± 0.1°C.
- It should have direct heating with convection to provide stable temperature control.
- Should have excellent uniformity and rapid recovery with no over shoot event.
- It should have CO₂ control range from 0.2 to 20% with control accuracy and uniformity of ±0.1% and should have rapid recovery of at least 0.7% per minutes.
- Should have minimum 4 adjustable height shelves & humidity reservoir (removable) to achieve at least 90-95% RH.
- It should have two level alarm systems includes audio & screen displayed alarms for system status, with programmable alarms for CO₂ and temp set points, delays, duration
- It should have preferably HEPA or ULPA filter on CO₂ inlet.
- It should also have separate over temperature cut-out, automatic alarms set point reset and password protection
- Sterilisation facility with dry heat / moist heat at 140°C or 95°C respectively
- It should have RS-232 option
- It should have internal glass door
- A voltage stabilizer may be provided with CO₂ incubator
- Original catalogue must be enclosed
- CO₂ cylinder regulator= 2
- Equipment must cover warranty of minimum 2 years from the date of installation
- It should have ISO 9001 & CE Certification
- Optional= AMC/CMC may be covered at least for 2 years post warranty period
- Optional= Door unit for individual chamber compartment may be quoted

*************************************************************
Water bath:
Specifications:

Capacity: 10 Litres
Temperature range: 5 to 100°C
Temperature control: Primary PID, Secondary: Hydraulic thermostat
Temperature sensor: 100 Pt
Display: LED ℃
Wetted material: Stainless steel
Lower level cut off: Adjustable
Working depth: 12-16cm
Temperature accuracy: ±2°C
Shaker facility: Required

Equipment must cover warranty of minimum 2 years from the date of installation
Water Bath
Size Interior(cm); 60 Length x 30 Width x 20 Depth; (aprox)
Water bath of circulation water type;
Digital display of temperature
Body: Stainless steel, double walled;
Temperature range: 15 to 100°C
Microprocessor based digital temperature indicator.
Digital display of Set Value (SV) and process Value (PV)

Equipment must cover warranty of minimum 2 years from the date of installation
Microscope

1. ATTACHMENT – REQUISITION LINE:- Detailed specifications for inverted Biological Microscope with Fluorescence attachment

   Eyepiece: Widefield 10x adjustable
   Objectives: (infinity corrected)
   1. 4x  2. 10x  3. 40x  4. 100x

   Excitation Filters:
   Blue Excitation Standard: 400nm-490nm
   Green Excitation Standard: 510nm-550nm
   Light Source: 100W halogen/mercury
   Observation Head: Trinocular
   Coaxial coarse with fine focusing controls
   Camera: Vertical phototube fitted with compatible CCD camera(≥5M pixels)
   Mechanical Body & software:
   Co-axial focusing system, fine focusing scalez
   Imaging software with JPG, TIFF format
   Operating Power: 220-240 V AC with Frequency: 50 Hz

   OPTIONAL ACCESSORIES (quoted separately):
   2. Display 20 inch LED/LCD, resolution higher than 1366x768 Pixels
   3. Desk Top computer with new specification &> 4 GB RAM

   Equipment must cover warranty of minimum 2 years from the date of installation
### UV-Vis recording Spectrophotometer

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photometric System</td>
<td>Double beam optics 3.0</td>
</tr>
<tr>
<td>Photometric range</td>
<td>Absorbance -4 to + 4.0 Abs Transmittance: 0.0 to 400%</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>+/- 0.004 Abs. at 1.0 Abs &amp;</td>
</tr>
<tr>
<td></td>
<td>+/- 0.002 Abs. at 0.5 Abs or better</td>
</tr>
<tr>
<td>Wavelength Range</td>
<td>190 to 1000 nm or higher range 900 nm</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>+/- 0.1 nm or better</td>
</tr>
<tr>
<td>Wavelength Repeatability</td>
<td>+/- 0.1 nm or better</td>
</tr>
<tr>
<td>Photometric Repeatability</td>
<td>+/- 0.001 Abs or better</td>
</tr>
<tr>
<td>Scanning speed</td>
<td>Selectable up to 3000 nm/min or better</td>
</tr>
<tr>
<td>Spectral Bandwidth</td>
<td>1 nm or better</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 nm or better</td>
</tr>
<tr>
<td>Stray light</td>
<td>Less than 0.02% at 220nm &amp; 340 nm.</td>
</tr>
<tr>
<td>Baseline Stability</td>
<td>&lt;0.0003 Abs/H</td>
</tr>
<tr>
<td>Baseline Flatness</td>
<td>&lt;0.0006 Abs/H</td>
</tr>
<tr>
<td>Noise Level</td>
<td>&lt;0.00005 Abs</td>
</tr>
<tr>
<td>Monochromator</td>
<td>Czerny Turner blazed holographic grating</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicone photodiode</td>
</tr>
<tr>
<td>Display</td>
<td>Built in LCD display for standalone operation</td>
</tr>
<tr>
<td>USB Port</td>
<td>5 or more USB ports for data storage</td>
</tr>
<tr>
<td>Light source</td>
<td>Tungsten and Deuterium lamp.</td>
</tr>
<tr>
<td>Quartz Cuvette</td>
<td>1 ml capacity with pathlength of 10mm (01 Pair),</td>
</tr>
<tr>
<td></td>
<td>0.6 ml capacity with pathlength of 10mm (01 Pair),</td>
</tr>
<tr>
<td></td>
<td>0.4 ml capacity with pathlength of 10mm (01 Pair)</td>
</tr>
</tbody>
</table>

Spectrophotometer should have built in hardware validation for Wavelength accuracy, wavelength repeatability, resolution, stray light, photometric accuracy, photometric repeatability, baseline flatness, baseline stability, noise level and validation software along with optical filter for wavelength calibration.

Windows based Operating software should have built in features like real time concentration display, Photometric mode Single / multi-wavelength, Enzyme Kinetics calculation, event recording such as addition of reagents during measurement, DNA/protein quantification etc.

Data analysis and storage system should be a branded PC/laptop with core i5 or higher level processor, 500 GB or higher capacity HDD, 4 GB RAM, USB ports and laser jet printer.

Supporting documents to reconfirm the offered specification should be attached.

On-site installation and application demonstration, two year warranty with 3 year comprehensive maintenance contract.
SPECIFICATIONS OF 300mA X-RAY MACHINE (HIGH FREQUENCY MACHINE)

High frequency X-Ray machine suitable for general Radiography & compatibility for Digital radiography.

X-RAY GENERATOR

- High frequency X-Ray generator having frequency of 40 KHz or more suitable for Radiography should be provided.
- Power output of generator should be 20 KW or more.
- Radiography KV range should be 40 to 110 KV or more.
- mA range (Rad): 300mA (Approx).
- Exposure time (Rad): 0.02 ms to 2 sec. with maximum numbers of steps.

CONTROL:

- Compact, Soft Touch Control panel.
- Floor or wall mount with spill proof design with Machine ON/OFF switch.
- Digital Display of KV & mAs.
- KV & mAs increase and decrease switches.
- Tube focal spot selection switch.
- Ready and x-ray on switch with indicators.
- Bucky selection switch.
- Self diagnostic programmed with indicators for Earth fault error, kv error, filament error & tube’s thermal overload.
- Dual action hand switch retractable cord should be provided.

X-RAY TUBE:

- One No Dual Focus rotating anode X-ray tube thermally protected having focal spot: -
  1.2 mm or less small Focus
  2 mm or less Large Focus
- Anode heat storage capacity of tube should be more than 100KHU.
- One pair of 8 meter H.V. cable.
- One no manual collimator with aluminum filter & for adjustment of exposure area.

COLUMN STAND:

- It should have floor to ceiling stand with vertical counter balanced travel.
- It should have 360 deg. Rotation.
- It should be provided with one chest stand with machine.
TABLE:

- Five position manual tilt table having Bucky grid ratio of 6:1 with 60 lines per inches should be provided.
- The Bucky tray should accept cassette up to 14” x 17” size along with cassette of CR system.

(B) Specification for Digital CR package for Xray

1. Reader (10 Pixel or more)
   - Single or double cassette feed
   - Through put: 72 plates/Hour or more
   - Accept all cassette size
   - High quality transfer interface
   - Automatic plate loading with Interface erasing
   - Integrates to all DICOM compatible PACS software
2. CR Server: PC with guanine window, 160 GB or more hard disc, 1GB or more RAM, monitor-19 or more, colour touch screen with 300 GB or more, external Hard drive backup & USB 2.0 interface
3. Dry laser image printer with resolution 500dpi or more that is able to print out all film size
4. CR Online processing user friendly software for multiple task like automatic image processing of the incoming raw data from the CR unit, automatic window level setting HIPPA security Log and IHE workflow compatibility. Intelligent design for fewer steps and clicks.
5. CR Id user friendly software for records patient demographic and examination data in a study-oriented format with backup in hard disc.
6. DICOM CD Export, DICOM print DICOM STORE/SEND.
7. Custom work station for digital system.
8. CR cassettes 10x12, 14x17 Automatic cassette as per standard norm

Other requirements.

1. The company should be ISO certified and machine with European CE/USFDA certified will be preferred.
2. The unit should be approved by AERB for radiation safety norms. The company should provide layout plan and QE test report for registration from AERB.
3. The company should have proven track record of service in Govt sector, it should enclose list of recent installation in Govt. Hospitals in last three years. Company should not be blacklisted from any Government organization in India (self declaration of the same must be attached).
4. The X ray machine should be supplied and Installed at site with working compatibility on three phase power supply.
5. Company should provide information regarding well established after sales service network available locally/ nearest in the region with call centre having 24x7 call login facility. Company should notify the complaint redressal policy.

6. Company should confirm the availability of spare parts for 10 years from date of supply of the equipment.

7. In case of dealer /distributor, proper authorization from original manufacturer should be enclosed.

8. The Machine should have 5 year onsite warranty from date of Installation. The rate for CMC for next 5 years, including Xray tube should be quoted separately.

9. Demo of machine and at least two trainings.

10. Minor electrical and civil work if required for installation of machine will be done by vendor.
Specification for Analytical Balance along with Stabilizer

1. Built-in calibration mode with auto calibration on touch of a button
2. Capacity 210g with 90mm pan size (200-240 g)
3. Tare range: Full to capacity
4. Readability: 0.001 mg
5. Average response time: 5 sec or better
6. Tall wind draft shield with easy shield removal & locking; side & top opening shielding windows for easy pan access
7. Backlit large-font digital display with sealed key pad for easy cleaning & maintenance
8. Operating voltage: 220-240 V
9. Ambient conditions: 6-45°C with up to 85% humidity
10. Dust protection cover: washable and acid alkali, organic solvent resistant.
11. Suitable voltage stabilizer

Original illustrated catalogue to support technical specifications & Users's list

Two years on site warranty

Optional: USB2/RS-232 port computer interface with easy data transfer to Windows® XP/7 OS or better based PC for GLP compliance.

Technical features should be supported by original literature & list of user
Detailed Specification of FUME HOOD

FUME HOOD Having Acid (perchloric/nitric /sulphuric) resistant cabinet preferably made of LS. S. 304, working table covered with Granit/ S.S (304). Front door made of Toughened glass manual sliding facility .With exhaust Blower and Exhaust Ducting. Working Florescent Light arrangement with Diffuser. With all essential accessories, electric fittings and fixtures working Area size Approx. 5’x 2’x3’. There should be options to install fume hood either as self standing or place on the work bench as been need.

Optional: Base Storage cabinet may be quoted separately.

Warranty: 3 Years.
UV/Vis spectrophotometer for micro-quantities

Specification

• UV/Vis spectrophotometer (polychromatic system with a reference channel) for quantification to micro-volumes of DNA, RNA and protein with capacity to differentiate between above three molecules.
• Nucleic acids and protein quantification up to 9-16 samples at a time.
• Specific quantification of DNA, RNA, and other contaminating fractions.
• Possible to use micro-quantities (minimal sample input of 2 µl containing 0.1-1.5 ng/µl of nucleic acids/protein.
• Wavelength range form 230-750 nm with the resolution of <3nm and accuracy 0.5nm.
• The system should cover the photometric range: 0.0005-2.0 OD and should provide the absorbance precision: 0.003 OD.
• Must provide comprehensive reports that can be viewed on any computer.
• Facility for data analysis and sharing of data through exportable USB stick /Networking device.
• Should be able to work on stand alone mode also.
• Compatible robust stabilizer.
• Suitable data work station along with analysis software to be provided.
• Warranty: Three years
Specifications of Vacuum Rotary Evaporator

Fully programmable dry vacuum evaporation system for achieving faster evaporation rates of multiple samples with following features:

1. Corrosion resistant, PTFE/Teflon coated chamber and interchangeable sample blocks to hold sample tubes of different capacities
2. Chemical resistant, vacuum tight, glass lid for viewing the samples while running
3. The chamber lid must be provided with heater to prevent condensation of vapors on the lid while evaporation
4. Brushless motor for variable vortexing speed of upto 1000rpm or more
5. Dry block heating system for achieving desired chamber temperature from ambient to 100°C or more
6. Full programming of parameters like vortexing speed, heating temperature, run time
7. Digital display of set and run parameters
8. Functions like pre-heating of chamber, release of vacuum, safety alarms and indication of completion of run.
9. Sample Blocks to be provided essentially with system:
   a) Sample block to accommodate atleast 48 conical centrifuge tubes of 15 ml capacity (one set of compatible tubes to be provided with system)
   b) Sample block to accommodate atleast 96 tubes of 10 ml capacity (one set of compatible tubes to be provided with system)
   c) Sample block to accommodate atleast 8 tubes of 100 ml capacity (one set of compatible tubes to be provided with system)
10. **Vacuum Pump**: Oil free, PTFE diaphragm vacuum pump with displacement capacity of atleast 60litres/min along with tubings/clamps and vacuum port must be provided to connect it with evaporation system. The evaporator and vacuum pump must be preferably from same manufacturer.
11. Compatible servo voltage stabilizer to be provided with system
12. **Warranty**: Atleast two years from the date of installation
13. **Original brochure/catalogue** with technical details to be provided with the bid

Optional Accessories:

1. Other sample blocks compatible with system to be quoted
2. Provision for safe disposal of vapours to out of lab
3. Spare set of gaskets
4. Chemical resistant traps
5. Any other accessory that may enhance the performance of the system
Specifications of Vacuum Heating Oven

Microprocessor controlled Vacuum Oven with following features:

1. Bench top model convenient to place on work bench of 30 inch width
2. Fully programmable, jacket heating model to achieve uniform heat distribution
3. Temperature: ≥ 200°C
4. Chamber Volume: ≥ 50 Litre
5. Front opening door with Viton/fluorine rubber door gasket
6. Provision for heat tempered glass window in the front door for viewing inside chamber
7. Stainless steel shelf: at least 4
8. Provision for connecting inert gas like nitrogen
9. Digital display of sample temperature
10. Digital display of pressure and digital pressure controller with solenoid valve
11. Must have separate vacuum vent valve and release valve, stainless steel vacuum connections and tubings
12. Digital timer to set desired time of run.
13. Maximum temperature deviation at 200°C : ≤4°C
14. Safety Features: Over temperature protection with audible and visual alarms, open door alert etc.
15. Must have RS-232 interface for data logging applications.
16. Vacuum Pump with following features to be supplied
   a) Oil free, chemically resistant vacuum pump with PTFE diaphragm
   b) Pumping capacity of atleast 9 m³/h and achieving pressure of 2mbar
   c) All tubings, vacuum port and clamps to connect it to Vacuum oven and anti-vibration metal plate to accommodate vacuum pump on bench must be provided.
17. Electrical power requirement : 230V, 50Hz
18. Warranty: Atleast two years from the date of installation
19. Original catalogue/brochure showing details of quoted model must be provided
20. Any other accessory that may enhance the performance of this system may be quoted as optional
21. Spare door gasket may be quoted as optional
Specifications of Water Bath

Fully programmable, microprocessor controlled refrigerated as well as heating circulator water bath with following features:

1. Bench top model convenient to place on a work bench of 30 inch width
2. The bath can be used for internal as well as external temperature control applications
3. Working temperature range: ≤ -10°C to ≥150°C
4. Heating Capacity: 2KW
5. Circulating Pump Capacity: ≥20 Litres/Minute
6. Temperature Stability: ± 0.01°C or better
7. Bath Tank Depth: Atleast 15Cm
8. Bath tank area: Atleast 200Sq Cm
9. Capacity of bath tank: 7 to 10 Litres
10. Bath tank body must be made of corrosion resistant stainless steel
11. Must have a drain port for completely draining fluids from the bath tank
12. Must have digital display of set and run parameters
13. Must include all tubings, clamps and port/adapters for external circulation
14. Safety Features: Over temperature indication with audible/visual alarms, low water level in tank warning etc.
15. Provision to on/off the circulator pump as per requirement
16. Must have RS-232 interface for data logging applications
17. Electrical power requirement: 230V, 50Hz
18. Warranty: Atleast two years from date of installation
19. Original catalogue/brochure showing details of quoted model must be provided
20. Any other accessory that may enhance the performance of this system may be quoted as optional
Specification of double beam UV-VIS Spectrophotometer

Double beam optics operating through computer or stand alone 200-900 nm, spectral band width 1.0 nm.
Filter and dark current setting automatic through software/manual
Single, multi wavelength scan and time display through LCD/PC
Measuring as % T, absorbance, concentration, k factor.
Detector: Dual Si-Photo diode or Photomultiplier (optional)
Provision for thermal controlled cuvette holder.
Compatible stabilizer working voltage 230 volts/
Printers: Printers, USB I/F Windows-compliant printers
Local control or PC control versions.

Equipment must cover warranty of minimum 2 years from the date of installation
Specification for Storage Units

1. 1 Nos Single face static unit 1980x915x457 (mm)= 1 Nos Single face movable unit 1980x915x457 (mm)+ Nos Double faced movable units 1980x915x914(mm) with hinge door= 1 Complete Unit

2. 1 Nos Single face static unit 1980x915x457(mm)+ 1 Nos Single face movable unit 1980x915x457(mm) + 3 Nos Double faced movable units 1980x915x914(mm) with hinge door= 1 Complete Unit.

Goods must cover warranty of minimum 2 years/ Standard Manufacturer`s warranty from the date of installation
Spectrophotometer (ICP-OES)

Fully automatic complete functional system using a polychromator with all essential accessories needed to run the system (able to analyze all kind of mineral elements including hydride forming element in biological samples with following specifications.

<table>
<thead>
<tr>
<th>Measurement mode</th>
<th>True simultaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Generator</td>
<td>40 Mhz or higher with RF output 1500 watts or better</td>
</tr>
<tr>
<td>Gas control</td>
<td>PC controlled Auto mass flow controller for all the gas flow</td>
</tr>
<tr>
<td>Peristaltic pump</td>
<td>With three or more channels</td>
</tr>
<tr>
<td>Plasma viewing</td>
<td>Dual view</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.007 nm or better</td>
</tr>
<tr>
<td>Light source</td>
<td>Fully demountable plasma torch</td>
</tr>
<tr>
<td>Torch position</td>
<td>Dual view</td>
</tr>
<tr>
<td>Wavelength range</td>
<td>About 160-770 nm or wider</td>
</tr>
<tr>
<td>Plasma tail management</td>
<td>By compatible Air blower system</td>
</tr>
<tr>
<td>Optical system</td>
<td>Polychromator Echelle optics</td>
</tr>
<tr>
<td>Detector</td>
<td>CCD/CMOS</td>
</tr>
<tr>
<td>Sample introduction /handling kit</td>
<td>Aqueous sample introduction handling kit</td>
</tr>
</tbody>
</table>

Essential Accessories

1. Compatible hydride generator for simultaneous analysis of hydride forming elements
2. Argon gas cylinders with regulators :3
3. Exhaust system / fue hood made of non-corrosive metal with duct ( as per installation requirement )
4. Compatible voltage stabilizer
5. Compatible UPS (10KVA Online ) with at least 2hrs back up
7. Compatible window bases software with data recorder and analyzer computer (latest system available at the time of supply) with laser printer .
Operable at 220±5% VAC with line protection system.
Provided with safety interlocks: The system should be able to constantly monitor water flow, shear gas pressure, argon pressures, sample – compartment door closure and plasma stability should immediately shut down
To be fitted /l installed and working demonstrated with at least 3 training onsite.
Address, Email ID and phone number of ICP – OES users (preferably of the quoted model supplied by your firm) with their performance reports /feed back
Original Brochure highlighting the desired features/ specification
Warranty: 2 years for whole machine and its all parts including accessories

**Accessories ( Rates to be quoted separately for each item)**
1. AC Unit (2Tons ) split: One
2. Nitrogen gas cylinders with regulators: 2
3. Argon humidifier, cooling system (if any required ): Compatible to the instrument
4. Spares: Nebulizers / Spray chambers, injectors, Torches designed for quick and easy replacement Tubings for sample intake and drainage for next 2 years considering a load of about 200 samples per month.
5. Auto – sampler ( able to handle 80-100 sample) with 1000 tubes
6. Microwave sample digestion system – Precise control with high-power heating and high-pressure capability along with built- in cooling
7. Sample block digester system – Acid resistant, Teflon – coated blocks with temperature uniformity

8. **Rates of AMC for next three years after warranty period**
Specification of 500mA X-Ray Machine (High Frequency)

High Frequency X-Ray machine suitable for general radiography and compatibility for digital radiography.

X-ray Generator

High frequency X-Ray generator having frequency of 25 KHz or more suitable for Radiography.

- Power output of X-ray generator should be 32KW or more 500mA at 50kV; 160mA
- 500mA – 40 to 100KvP
  400mA – 40 to 100KvP
  300 mA – 40 to 125KvP
- Kv Range 40-125KvP in multiple steps

  mA range 50to 500 or amore : small focus (40,40,200)
  Exposure time 20ms to 2sec or more .

- AC – 440v Three phase power supply 50/60Hz

Control

- Machine ON/OFF switch
- Digital display of kV, mAs, mA
- kV and mAs increase and Decrease switches
- independent limits for mAs and kVp
- micro controller based console with LCD display
A Switch for exposure time selection

- tube selector two inter locked pushed button “F” and “R” select under couch or over couch X-Ray tube

- Voltage compensation switch to compensate voltage from 170-260 volts

- major kVp control switch for coarse selection of kVp

X-Ray Tube

- one No. Dual focus rotating anode X-Ray tube thermally protected having double focal spot: 0.3mm x 0.3mm/1.2mm x 1.2 mm less small focus and 2mm x 2mm or less large focus

- Anode speed 2800rpm or more (9700)

- Anode heat content 100KHU or more.

- inherent filtration 2mm AL

- high tension cables (standard length 8mtrs.)

- tube should be from an international reputed manufacturer. The firm must supply brochure / literature of the tube which is being used in the unit. The tube should be CE approved/USFDA/BARC approved.

- display of thermal units on the tube

- compact heavy duty transformer for single tube operation

- manual collimator

Stand

- It should have ceiling suspended stand atleast 180 degree rotatable.

- Stand should have 360 degree rotation/rotatable

- Telescoping column for variable FFD

Tube Stand Should be freely moveable.

Manual collimator: Manual Collimator with four pairs of leaves or more, cone field light lamp measuring tape.
**Bucky and table:** Table size minimum 60”X28”, all Stainless Steel 304 grade frame 16gauge 25X50mm section with hydraulic up and down movement table top compatible for X-Ray bucky suitable for 14”X17” cassette bucky diaphragm with bucky adapting puts travels entire length of table. Stainless steel cassette tray self centering of cassette. Bucky should have grid ratio of 6:1 or more with minimum 40 lines per inch.

**Specification for Digital CR package for X-Ray**

- Reader (minimal 10 pixels/mm or more)
  - Single or double cassette feed
  - Through put:55 plates/Hour or more
  - Accept all cassette size

Integrates to all DICOM compatible PACS software

- CR Server: PC with genuine window, 160GB or more hard disc,1GB or more RAM, monitor -19” or more, with 300GB or more external Hard Drive back up and USB 2.0 interface

- CR online processing user friendly software for multiple task.

- CR ID users friendly software for records patient demographic and examination data in study oriented format with back up in Hard disk.

- Software Veterinary Specific

- 3 KW online UPS

- Custom workstation for digital system. Hardware PC Two key boards, two mouse, two monitor, two LEDs.

- CR Cassettes 10X12 , 14X17 automatic cassette as per standard norm.

- Standard components

- AC Power Cord.

- Time Required for IP Feed/Load- minimum 66 sec.

- Time to print on – approx 165 sec. in case of 35X43 cm.

- No. of stacker- one

- Dimensions (WXDXH)- 600X400X780mm (24”X16”X31”)

- Power supply conditions – single phase 50-60 Hz AC 100-240 V±10% 5A (max)
**Accessories**: Lead apron 4 Nos, Lead Gloves Set Four, Dry Camera/Printer Dry Pix Smart(2 Tray) – One, UPS 3 KVA on line.

**Specifications for Printer**
- Recording method Laser Exposure Thermal development system
- Film loading day light film loading
- one or two Film tray to accepts all sizes of films available.
- Pixel size 50 um(508 dpi) or more.
- Power Supply conditions in put voltage AC 100-240V/single phase frequency 50-60 Hz.

**Other Requirement**
- The company should be ISO certified and machine European CE/USFDA AERB/BARC certified.
- The unit should be approved by AERB for radiation safety norms attested copy of AERB certificate to be attached
- The company should have proven track record in Government sector. Company should not be blacklisted from any government organization of India.
- List of recent installation in Govt. Hospitals.
- The machine should be supplied and installed at the site with working compatibility on 440 volt /three phase power supply.
- Company should have well established after sales service network. Proven after sales service record.
- Company should confirm availability of spare parts for 10 year from date of supply of the equipment.
- In case of dealer/distributor, proper authorization from original manufacturer should be enclosed.
- The machine should have 3 years onsite warranty from the date of satisfactory demonstration/installation. The rate for next 3 years CMC including X-Ray Tube should also be quoted separately.
- Free onsite installation demo of machine along with 2 trainings.
- The company should provide layout plan and QE test report for registration from AERB.
- Minor electrical and civil work if required of installation will be done by the vendor.
Specification CO2 Incubator

Microporcessor controlled, not less than 170 Liters capacity, CO2 Incubator.
Temperature 4°C above ambient to 50°C, accuracy ±0.1°C.
CO2 range 0.2 to 20%, accuracy of ±0.1%
Infra-red (IR) CO2 sensor.
Minimum 4 adjustable shelves.
Digital display and audio visual alarm.
Air filter at CO2 inlet.
Equipped with HEPA filter
Two additional HEPA filter will be required along equipment
Two CO2 Cylinders with Regulator.
Air jacketed
Stainless steel interior of chamber.
25mm access port.
ISO 9001 & CE Certification.
Original brochure of instrument and list of users should be given.
Instrument should come with suitable stabilizer
Two years warranty on all parts of equipment should be provided.
Compatible voltage stabilizer; Working range 220-240 Volts.
CO₂ INCUBATOR

SPECIFICATIONS:

1. CO₂ Incubator (air jacketed/direct heat) of capacity aprox. 160-200 L with temperature control from 10°C below ambient with inbuilt cooling and up to 50°C.
2. It should have all sided direct heating system. Fanless system for reduced risk of contamination.
3. It should have large easily viewable backlit display screen.
4. It should have alarm systems both audio & screen displayed alarms for system status, with programmable alarms for CO₂ and temp set points, delays, duration and more.
5. It should have HEPA/air filter on CO₂ inlet, additional 3 HEPA filter to be quoted.
6. It should come with CO₂ gas cylinder with regulator (2 each).
7. It should be ISO 9001 & CE Certification.
8. Split AC (1.5 ton) for better functioning of the incubator
9. User List is essential
10. Warranty 2 years from date of installation.
11. Suitable Servo stabilizer
12. Independent door unit for separate racks may be quoted as Optional.
Specification for orbital shaker incubator

- Temperature range: 5°C above ambient to 60°C with an accuracy level of ±0.2°C, safety thermostat to prevent overheating
- Maintain temperature uniformity of 0.5°C throughout
- Speed range: 30-300 rpm
- Provide uniform agitation, stabilized orbital motion under uneven load distribution and handle heavy loads even at high speeds
- Orbit of 19mm or more
- System should have continuous/timed operation from 1 min to 96 hours
- Shaker should shut down if unit operates excess of ±10% of set speed/temperature
- See through glass window
- Digital control along with LCD/LED display for temperature, time, and speed
- Automatic restart in case of power failure
- Audio/visual alarm for safety
- To work on 220/230 volts A.C. supply
- Supplied with universal platform fitted with clamps for flask capacity 50/100, 150, 250, 500, 1000ml and 15/50 ml tube racks
- Supply automatic 2KV or good quality compatible voltage stabilizer with equipment
- List of users with complete address detail, email, and phone number
- Should be provided with original printed catalogue, the bidder providing photocopy or computer printout of catalogue will not be considered
- Optional
  a. De driven & brush less motor
  b. Unbalance load sensor
  c. Arrangement for U.V. germicidal tube

Equipment must cover warranty of minimum 2 years from the date of installation