

**Animal Biotechnology Centre, NDVSU, Jabalpur (M.P.)
No. 298/ABTC/NDVSU./2015 Dated 05/12/2015**

TENDER NOTICE

Sealed tenders are invited from the reputed manufacturers or their authorized dealers for supply of Equipment/items. Last date for submission of tender by registered post addressed to the undersigned is 05-01-2016 upto 5 PM.

The detailed information can be downloaded from VV website : www.mppcvv.org

Director
Animal Biotechnology Centre
JNKVV Campus, Adhartal, Jabalpur

Animal Biotechnology Centre, NDVSU, Jabalpur M.P.

**TERMS & CONDITIONS OF TENDER FOR PURCHASE OF EQUIPMENT
ITEMS DURING THE YEAR 2015-2016**

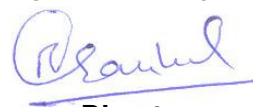
Tender Notice No.298 /ABTC/NDVSU/2015 Dated 05/12/2015

M/s. _____.

- 1 The tender document may be downloaded from the website of the University(www.mppcvv.org).Tender has to be submitted along with **Indian postal Order or Demand Draft of Rs.1,000/-** in favour of the **Director, Animal Biotechnology Centre, NDVSU, Jabalpur**. The tender cost of Rs. 1000/- is payable for **each instrument separately**. Tenders must be submitted in sealed envelope addressed to the undersigned by **Registered Post only** and with acknowledgement due so as to reach on or before **05.01.2016 up to 05:00 P.M.** **It is advisable to send the tender envelope for each instrument by registered post separately. The tender after due date and time will not be accepted at any cost.** The envelope cover shall bear **the address of the firm/tenderer along with name and number of the item/instrument as per the tender document.**
- 2 The tender without tender fees will not be valid and hence it will be rejected.
- 3 The technical bid of the tender will be opened in presence of the firm/tenderers or their authorized representatives at **11:00AM on 08.01.2016**. In case any firm/tenderer fails to present himself on the appointed time, the competent authority shall have the right to open the tender in their absence.
4. The tender will be based on **two bid system**. The envelope **A** will contain technical bid and envelope **B** will contain the financial/price bid.
A. Document to be kept in envelope A (Technical Bid)
 - Technical specification of the instrument(s) along with original brochure/leaflet.
 - Earnest money of the instrument as mention in appendix A.
 - Sale tax registration certificate along with TIN No.
 - Firm/tenderer copy of PAN issued by Income tax department.
 - List of installation of instrument in reputed national or international institute/university alongwith 2 to 3 satisfactory report of user from India.
 - A copy of registration in state/municipal Corporation.
 - Firm/tenderer should provide the detail of Income Tax for last two years
 - Firm /tenderer should furnish a document of proof having turnover of around Rs. 75 lakhs during last 3 years or turnover of Rs. 25 lakhs in financial year 2014-15.

- Firm/firm/tenderer should provide the self attested no-relationship certificate.
 - The copy of all the required international certifications must be enclosed.
 - The firm//tenderer should submit the compliance format (Appendix C).
- B. The envelope B will contain the only price of the instrument in enclosed format (Appendix B). The price should be written on letter head of company, sealed and signed by authorized person of the firm/firm/tenderer. The envelope B open only if firm/firm/tenderer will qualified technical bid.**
- C. Envelope 'C' will contain both envelope A + B. The S.No. of all the instrument quoted by the firm must be written on C envelope.**
5. The list of technically successful firm/tenderer of each item will be notified on or before 23-01-2016 and upload on web site.
 - 6 **The price bid will be open on 30-01-2016 in presence of the successful firm/firm/tenderer of all the items.**
 - 7 The tender shall not be acceptable without the receipt of earnest money/security deposit in the shape of **Fixed Deposit Receipt (FDR) mentioned along with the name of instruments** issued by any Nationalized Bank, in favour of **“Director, Animal Biotechnology Centre, NDVSU, Jabalpur,”** which will be refunded after warranty period, in case of acceptance of the tender.
 - 8 The amount of earnest money/ security shall be refunded in full if tender is rejected.
 - 9 The above security is taken for due performance of the contract as per provisions of the conditions mentioned in tender form. The same will be refunded on the expiry of the contract on successful completion of the supply with reference to specifications with proper supply and adjustment of any loss by way of purchasing the goods from other party / parties in case of dishonoring of the indent for supply and deliberate non supply.
 - 10 Specifications are attached as **APPENDIX “A”** along with Terms & Conditions.
 - 11 Quantity of the items to be purchased will depend on the requirement and their shall be no obligation to place order for any quantity of the item.
 - 12 **Reputed Manufacturers and their authorized dealers should only submit the tenders for Appendix No. “A” without which no tender will be accepted.** In case authorized dealers is submitting the tender, certificate of authorized dealership from the manufacturer must be enclosed along with the tender documents. **Sub-dealers authorized by authorized dealer are not eligible for participation.**
 - 13 Tenders shall not be accepted without sales tax registration number of the firm.
 - 14 The competent authority, **“Director, Animal Biotechnology Centre, NDVSU, Jabalpur”** reserves the right of accepting the tender in part or whole or distribution of the supply between one or more firm/tenderer.
 - 15 The submission of a tender by a firm/tenderer implies that he has read the terms and conditions of tender/contract and is fully aware of the scope and specification of the supplies to be made. He also must satisfy himself regarding the suitability and availability of the materials as per the tender document.
 - 16 The competent authority (**Director, Animal Biotechnology Centre, NDVSU, Jabalpur**) reserves the right to increase, decrease or withdraw any item/items of supply during the contract under tender and the firm/tenderer will be bound to comply without any claim for compensation.
 - 17 **The rates quoted for item no. 1-8 and 12-25 shall be F.O.R. delivery at College of Vety. Sci. & A.H., Jabalpur and Animal Biotechnology Centre, Adhartal, Jabalpur for Appendix A.** The rates quoted should be inclusive of packing and forwarding charges loading/unloading/ handling charges, freight, full risk coverage, insurance, etc.
 - 18 For the three items (Item No. 9-11) required for college of Vety. Sci. & A.H. Mhow, the rate should be quoted as FOR, college of Vety. Sci. & A.H. Mhow.

- 19 All losses during transit i.e. breakage and shortage etc. will have to be supplied by the firm/tenderer at his own Cost within a period of **15 days** from the date of receipt of notices in this regard.
- 20 The undersigned does not bind him to accept only the lowest rates, and decision of the purchase committee shall be final and non-challengeable at any case. Normally lowest tender will be considered. However, in special cases, in case of minor difference in cost of the instrument having addition special feature if quoted by company may be recommended for purchase.
- 21 The firm/tenderer shall not submit whole or any portion of the contract to any party or parties, else the competent authority is free to cancel the contract and forfeit the security deposit.
- 22 The firm/tenderer shall arrange to supply the commodities within **2-4 week** (For imported items within 06-08 weeks) from the date of receipt of the supply order from the constituent units of the university, unless otherwise indicated in the supply order. In case the firm/tenderer fails to execute the orders of supply within the stipulated period, the competent authority (**Director, Animal Biotechnology Centre, NDVSU, Jabalpur**) will forfeit the security amount and will be free to make alternate arrangement for purchase of goods.
- 23 **The VAT TAX/CST where ever applicable for a particular instrument, has to be shown separately which will be deducted by the institute and certificate in this regard will be issued by the institute.** All other taxes, if any, have to be paid by the supplier himself.
- 24 **Although the NDVSU, Jabalpur does not have the DSIR certification for custom exemption, but have importer exporter code. Thus, if possible, especially for costly equipments (> 5.00lakhs) the imported instruments may be imported directly in favour of unit of the University, so that VAT/CST will not be applicable.**
- 25 Single rate should be offered for the entire tender period i.e. up to **31.03.2016**. Rates quoted for less than this period are liable to be rejected.
- 26 The agreement bond should be executed mentioning that the **company will abide by the tender terms and condition on a non-judicial stamp paper worth Rs.100/-** within two week by the successful firm/tenderer. In the event of failure on the part of any successful firm/tenderer to execute the agreement bond on non judicial stamp paper within the prescribed time limit, "**Director, Animal Biotechnology Centre, NDVSU, Jabalpur**" will be competent to forfeit the security deposit of such successful firm/tenderer.
27. **International certifications (CE/EU/ISO etc.) as indicated for each item separately must be submitted along with the technical specification in envelope A.**
- 28 The quoted instrument/item should comply about 75 per cent specification of specification which must include essential specifications marked with star (*) in appendix A.
- 29 In case of any dispute arising out of this contract, the arbitration power rests with the Vice-Chancellor, NDVSU, Jabalpur whose decision will be final.
- 30 Tenders once submitted the firm/tenderer can not withdraw the tender.
- 31 Firm/tenderer has to write clearly the name, address, E-mail and telephone/mobile number of authorized person of the firm.
- 32 **Please quote the rates in Indian Currency only.**
- 33 **In case of any dispute, judicial area will be Jabalpur High Court only.**



Director

Animal Biotechnology Centre
JNKVV Campus, Adhartal, Jabalpur - 482004

Appendix A

List of Instruments

Item No. 01 Deep freezer (-20°C) with LN2 Backup (EMD - Rs.6000)

- *-20°C ± 1.0 °C increment, vertical upright deep freezer with internal capacity approximately 200 L–400 L and minimum four shelves with individual door.
- Running ambient temperature should be at least 32°C.
- Should have Front mounted display/control panel located at eye level.
- *Individual shelves with insulated inner door to help in maintaining cabinet temperature during opening.
- *Alarms: Hi/Lo temp, power failure, remote alarm CFC/HCFC free refrigerants system and environment friendly (Ozone friendly)
- *Low noised levels below 60 dBa.
- *Freezers must have international certificates such as SGS, CE, UL/EN, EM / ISO9001 or equivalent a copy of the certificate must be attached with technical bid.
- *Five year compressor and twelve years complete freezer system warranty.
- *Compatible stabilizers should be provided
- Competent service support locally should be provided.

Optional Accessory

- LN2 backup system to maintain the temperature -20°C during failure of electricity

Item No. 02 Centrifuge Machine (EMD - Rs.3000)

- *The centrifuge machine should be have compact and benchtop design for laboratory work with minimum speed of 12000 rpm having digital speed indicator and 0-60 min. digital countdown timer.
- The system should have safety lid interlock to prevent cover opening during centrifugation.
- *The system should have dynamic brake for quick deceleration.
- *Should be provided with two rotors of 24 x 1.5 ml and 16 x 15 ml.
- System should have imbalance detector with cut off.
- *Should provide 2 years guaranty/warranty

Item No. 03 Liquid Nitrogen Generator (EMD - Rs.90000)

- The system should be efficiently produce liquid nitrogen and nitrogen gas simultaneously.
- Internal air compressor with sterile filters from air suction to cry-cooler to avoid contamination.
- *Should have cryo-head as part of the dewar assembly for efficiency of LN₂ production.
- *Should have liquid nitrogen outlet valve and transfer hose (10-12 feet) should be provided.
- *Should have liquid nitrogen generation capacity approx 6 ltr./Day.
- *Should have dewar (storage) capacity approx 60 lit. or more.
- *Capable of generating 5-6 lit. per minute N₂ gas.
- Should be installed on site with complete user technical training and backed by onsite after sale service support
- All accessories & electrical items required for installation of instrument should be provided.
- Should be supplied with ISI certified voltage stabilizer, as a part of instrument.
- *International certification like CE safety standard, IP 54, IEC 60204 are required.

Item No. 04 LN2 Storage Unit With Autofill System (EMD - Rs. 30,000)

- *The system should have integrated units of two LN2 containers, one for storage for biological material at ultra low temperature and connected with another LN2 storage unit with pressure control for LN2 transfer.
- *The system should work in such way that the automatically refill of LN2 in biological material storage unit by pressure control system.
- *System should be efficient for storage of bulk quantities of cryo-vials (1.5 to 2.0 ml).
- Capable of storing to large quantities of biomedical material over long periods of time safely.
- *System should have advanced super insulation and ultra high vacuum technology.
- The storage system must be supplied with racks and polycarbonate cryoboxes.
- *The system should have a dependable monitoring of the temperature within the refrigerator, the data logger to record sample temperature over long periods. The unit must have audible alarms for: _ Low LN2 Level / _ High temperature / _ Low battery power and Low Level LN2 Alarm etc.
- Roller base to be included within the offer.
- *The system should have total LN2 Capacity of 80-100 Liters, neck diameter 180-200mm with storage capacity approx 1000 cryovials
- *The LN2 container should of high quality metal as per international standards.
- If the item is patented, provide proprietary certificate from the manufacturer.
- All accessories required for function of instrument should be provided with the instruments.
- *International certification like CE safety standard, IP 54, IEC 60204 are required.
- Should provide 2 years guaranty/warranty

Item No. 05 Stereo Zoom Microscope With Digital Imaging System(EMD - Rs.21,000)

- *Achromate Stereozoom, zoom ratio approx.12:1
- *Magnification range 10x-200x or better [1x objective and 10x eyepiece] or better
- Achromatically corrected zoom optics
- Observation tube Viewing angle
- Working distance min 75mm or more.
- *Trinocular Video/photo tube
- *Eyepiece 10x/23B, adj.,- FOV 23mm or better
- *Objective 0.5x Achromate
- *Objective 1.5x Achromate
- *Illumination -Transmitted light stage with efficient LED or cool light.
- Reflected light illumination.
- **Digital Imaging System**
- *Digital Microscopy scientific Colour Camera
- 5 million pixel resolution or better
- Approx.5-15 frame per second capture capability
- Sensitivity equivalent to ISO 60 or better
- Software should be comes along with camera for acquiring & capturing of images.
- Camera should be compatible to attachment with desktop.
- C-Mont – 0.5x c mont adapter

- ***Software** – Automatic calibration , point to point measurement , annotation, Auto counting, live image capture, multipoint image capture etc.
- ***Hardware** – Latest HP/DELL Core i5 PC with 8GB RAM, 500GB HDD, “approx. 18.5” color LED monitor or better.
- All required accessories, adapter power cable should be provided.
- * Should be supplied with 2KVa online UPS.
- Microscope camera and software should be from same manufacturer for better compatibility.
- *Firm should provide the CE/ISO certification
- Should provide 2 years guaranty/warranty

Item No. 06 Gas Sterilizer (EMD - Rs.15,000)

- *Gas sterilizer should have easy operation and able to sterilizer efficiently different rubber and plastic materials like catheter, surgical gloves, sheets and tubing, cotton pad, scrub, bandages , fiber optic endoscope, optical medical equipment and other surgical metallic items.
- *System should be fabricated in approx 12”(H) x 12”(W) x 54”(D) chamber.
- *Should use 100% Ethylene
- *It should be supplied with all necessary accessories like tubing, gas, indicator tape, chemical indicator label etc..
- System should have leak alert.
- *The electronically controlled heating element ensures uniform heating of the chamber at preselected temperature (between 50 – 55⁰ C) for warm cycle. In rare cases if the material to be sterilised is highly sensitive to temperature then a lower temperature cycle can be selected (between 37-43⁰ C).
- Firm should provide the CE certification along with the chemical safety certificates.
- *All accessories required for function of instrument should be provided with the instruments along with sealing machine.
- *Auto stoppage facility provided which activates after successful completion of sterilization cycle.
- *Should provide 2 years guaranty/warranty

Item No. 07 Disposable OPU Needle for Veterinary Use (Accessories of colour doppler ultrasound) (EMD - Rs.6000)

- *Needle set for ultrasound guided ovum pickup for cow
- *Applicable ultrasound probes : Aloka, Exago etc.
- Individually packed and Sterilized by Ethylene Oxide Gas
- *High quality precision & imported needle.
- Needle should be One-way type for single use only
- Aspiration tube should be assembled made up of PVC
- *Needle size : 17G x 600mm
- Blast treated needle point for clear monitor image.
- Needles are coated by silicone oil.

Item No. 08 Centrifuge Refrigerated (EMD Rs. 12000.00)

- Table Top Refrigerated Centrifuge with Microprocessor Control System and LCD Display

- *Brushless induction low profile motor
- *Rotor Locking System Auto-Lock. Rotor lids should have a Quick Lock-system for secure lid closing and opening
- *Imbalance Detection System
- * Temperature Set Range approx. +35⁰C/40⁰C with fast Pre Cooling Function
- Refrigeration System CFC free
- *Noise Level at Maximum Speed < 60 dB.
- *Minimum timer Range 0 to 99min.
- * lick Seal. System should be incorporated with Rotor Auto-Lock,
- *Speed limit 15000 rpm or above with speed setting both in rpm and rcf
- *Supplied with 24 x 2.0 ml microtube rotor head
- *Automatic rotor recognition facility to automatically recognize and set maximum speeds upon rotor change
- Should be CE/ISO Certified
- **Optional Accessories**
- Supply of 15/50ml rotor is optional

Item No. 09 Instrument for Gel electrophoresis and western blotting (A to E) (EMD - Rs. 15000.00) FOR Vety.College MHOW

A. Specification for horizontal gel electrophoresis unit

- The midi horizontal unit has been designed for routine horizontal gel electrophoresis.
- *It should be made up of acrylic for Gel dimensions (WxL) 10 cm x 7cm or 10cm x 10 cm
- *Gel tray options of 10 cm x 7cm and 10 cm x 10 cm should be provided with the instrument
- *Gel dimensions (WxL) 10 cm x 7cm or 10cm x 10 cm
- *Provide the comb of 8 well,16 well (2 no.s with 1 mm thickness)
- Gel casting dams should be provided with the instrument.
- *Connecting cord, electrode and lids should be provided with instrument.

B. Specification for vertical gel electrophoresis unit (PAGE)

- Capacity: 2 gels,
- *Gel Casting: Ready for precast gels ; compatible for hand cast gels with casting units provided
- *Gel size: Approx 14cm × 16cmX 2 gels
- *Glass plates: three sets of glass plates provided with instruments (Notched and rectangular)
- Upper Buffer Tank Dimension: Approx. 140X70X20 mm
- Upper Buffer Tank Dimension: Approx. 200X160190 mm
- *Combs: 13 well Teflon comb should be provided
- *Teflon spacer: 0.5mm Teflon spacer 4 nos and 1mm Teflon spacer4
- *Connecting cord and electrodes should be provided with instrument
- Gel casting units should be provided with instrument

C. Specification for power supply:

- *Output DC voltage : 10-300V variable
- *Output current : 4-400mA Variable
- *Output : 4 parallel outputs, 4 mm socket.
- *Display : Digital

- Timer : 1-99 mins/ cont.
 - Size : 310 x 200 x 70 mm
 - Weight : 2 kgs approx.
 - Input Voltage : 230V, 50Hz, A.C. Supply
- D. Electro transfer Systems for western blotting**
- *Instrument can perform rapid transfer of DNA, RNA and protein blotting (typically 15 to 30 minutes). All units can be used for all types of blotting and are compatible with gel thicknesses from 0.25 up to 10 mm without the need for additional equipment. Each respective vertical gel system
 - *Uniform heat dispersion across the blot sandwich ensures stable transfer times and no heat induced sample loss or transfer distortions.
 - *Size : Midi, 10 cm x 10 cm
 - Buffer volume : 5 ml, 1 blot
 - *Maximum blot area : 10 cm x 10 cm or 2 blots 10 cm x 10 cm
 - Total dimension : 26 cm x 26 cm x 7 cm
- E. Protein Detection System**
- *System should be capable of protein detection in less than 1-2 to hour.
 - *System should be Vacuum base with two individually controlled sides allows independent processing of one or two blots
 - *It should have Two removable blot holding frame sizes, Mini and Midi, to accommodate both small and large blots
 - Stackable frames so multiple blots can be processed at the same time
 - *30-minute immunodetection with uniform signal across the blot
 - System should have greater than 80% antibody recovery
 - *It should be compatible with nitrocellulose and polyvinylidene fluoride (PVDF) membranes
 - *It should works with the most blocking buffers and visualization methodologies (e.g. chemiluminescence, sfluorescence, or colorimetric)

Item No. 10 Semi Automatic Biochemistry Analyser (EMD - Rs. 6000.00) FOR Vety.College MHOW

- The Semi-auto Biochemistry Analyzer measures biochemical indexes by analyzing blood and other body fluid, then combines with other clinical information etc.
- *Light source: Halogen lamp of more than 2000 hours life time
- *Spectrometer: High quality interference filter
- *Wavelength: 340nm,405nm, 505nm, 546nm, 578nm, 620nm and two free positions
- Band width precision:+- 2nm
- *Stray light:<-0.5% (absorbance>-2.5)
- Absorbance Range:- -0.214 -3.000
- *Absorbance Linearity +-1%
- Absorbance Repeatability:+- 0.001
- *Absorbance Resolution: 0.0001
- *Precision:<-1.0%
- Carry over:<-1%
- *Temperature :25⁰C, 30⁰C,37⁰C,+0.30C by Peltier
- *Flow cell: Permanent quartz flow cell , minimal volume is 32 ul and disposable flow cell is selectable.
- Sampling system: Pressure auto releasing pumps ensure the accuracy of suction volume.

- *Test method: end point fixed time, kinetic , factor, dual wavelengths, multi standards, bichromatic
- Parameter setting: Patients profile and calculated item can be set easily.
- Aspiration volume: 200ul – 3000 ul
- *Reaction curve: Real time display of the reaction curve
- Memory: More than 200 tests & more than 15000 patient results.
- QC: Automatic Levy-Jennings curve
- Reagent : Open reagent system
- *Display: 240 x 128 dots graphic LCD with high resolution
- Input: Via alphanumeric keypad.
- *Printer: inner thermal printer, able to be connected to external printer
- Report content: Absorbance, concentration, activity, detailed patient information and abnormal result making .
- *Interface: RS232 serial port can connect to computer
- Working condition: Temperature : 100C- 300C relative Humidity:20%-80%
- Voltage: AC 85-264V, Auto adaption according to the input voltage
- Power: <- 100w
- Blanking: Automatic Zeroing

Item No. 11 Digital Analytical Balance (EMD - Rs. 7500.00) FOR Vety.College MHOW

- The instrument should be capable for measuring the molecular grade chemicals with high precision and repeatability.
- *Instrument should have glass shield, with smooth-action doors that open extremely wide it should be ideally designed for thorough cleaning (removable weighing chamber base plate) and amply sized weighing chamber.
- *It should have measuring capacity from 0.01 mg to 100/220 g with repeatability of 0.01 mg.
- *It should have linearity $\pm 0.01\text{mg/}$
- *It should have pan size 80-100 mm
- Response time should be short with 3-5 second.
- *It should have internal motorized calibration.
- It should have full range tare system.
- System should provided with AC power adaptor 220 V, 50-60 Hz.
- *Instrument should have monolithic weigh cell technology
- *It should have backlight LCD display.
- It should have unit conversion and data output system.

Item No. 12 Spectrophotometer (EMD- Rs. 24,000)

- *Minimum Sample volume of 05-1 μl should be measurable and operable with Single sample
- *Path length be 0.5 to 1mm or below
- *Light Source(s) should be Xenon flash lamp
- *Detector should be based on CCD/Photo Diode array
- * Wavelength range should be 150 to 850 nm with accuracy of 1 nm or below
- Absorbance Precision and accuracy should be 0.001-0.002 or below and 2% (at 0.76 at 260 nm) or better
- *Absorbance range should be -0.02-500 or more
- * Detection Limit should be 2 ng/ μl (dsDNA)/ 0.1 mg/ml BSA or better
- Maximum concentration of sample detectable should be 15,000 ng/ μl (dsDNA) to 25,000 mg/ml

- *Provided with auto wiping function.
- The instrument should be supplied with compatible branded desktop or laptop with compatible licensed operating system
- All essential requirements accessories for smooth functioning of instruments should be quoted.
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

Item No. 13 Real Time PCR(EMD- Rs. 60,000)

- *Block upto 96 well plate to run typical 0.2 ml strips and plates with Peltier based Heating/cooling method
- *Automated & integrated system for both real-time PCR and post-PCR (end-point) analysis.
- **Hardware:**
- *96-well silver/gold block system with Peltier based heating & cooling.
- *Excitation –Emission range: At least 4 or above excitation filters and 4 or more emission filters
- *An LED based excitation with photodiode detection or Tungstone halogen excitation with photodiode detection
- Fixed (scanning free) optics for efficient calibration and acquisition of data.
- *Temperature range of 3°C - 99°C and Peak block ramp rate 3-5.0°C/ second or more.
- *Gradient operational range of 37°C - 98°C with gradient span 20°C to 40°C with heated lid up to 100°C \pm 6°C and high temperature accuracy of 0.25 °C or less.
- *Reaction volume of 10 – 50 μ L.
- *Sufficient memory to store approximately 3,000 run files
- **Software:**
- *Generates MIQE compliant RDML formatted data.
- *The instrument should have Cloud design and analysis software
- Analyze multiple perspectives in the Multiple Plots view, with side by side views of all data aspects including the amplification plots, standard curve, multicomponent data plots, and raw data. Give heat map of the amplification & analyzed data & PCR efficiency factor correction for gene quantification.
- *Support applications including absolute quantitation, Relative quantitation, multiplex-PCR, allelic discrimination (SNP), melt curve analysis as well as pathogen detection, plus/minus assay using internal positive control & High Resolution Melting analysis for gene & mutation screening.
- **Supporting Chemistries and Applications:**
- *Completely open system to support all the Real Time PCR chemistry like TaqMan, SYBR Green, Simple & Hydrolysis Probes and Molecular Beacons & flexibility to use micro well plates, individual tubes and 8-tube strips.
- *Multi-plexing for at least four colours for targeting four different genes in a single reaction tube without passive reference dye.The system should be open system.
- *Standardized for Taqman, SYBR Green, Simple & Hydrolysis Probe Chemistry applications like Gene Expression, SNP Genotyping, Viral Load analysis, Gene detection and Translocation Analysis, High Resolution Melting analysis etc. startup kit for above chemistries should be provided for standardization.
- Vibration free table along with branded online UPS of specified capacity and back up for instrument should be provided.
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

- All essential requirements for smooth functioning of instrument should be quoted with instrument.

Item No. 14 Vacuum Concentrator (EMD- Rs. 21,000)

- *System should be Compact & bench-top model with built-in chemical free diaphragm vacuum pump is suitable for individual researchers with limited space.
- *IR-emitting plate Glass Lid with the use of infrared ray, the sample can be concentrated efficiently in a vacuumed chamber in a short time. The special glass should have endurance against chemicals.
- *Should have Brushless D.C Induction motor makes almost no noise & vibration. Also, maintenance is not required because it is not necessary to replace brush.
- Exhalation hole for vacuum is located on the top of the shaft to avoid contamination and sample loss.
- *Should have wide range of Rotors for 1.5/2ml, 15ml, 50ml & micro-titer plate holder
- Few micro-liters up to 50ml tube hold at once and plate rotor should hold two interchangeable 96 well micro-titer plate.
- Should have built-in Cold & Chemical Trap -40°C or more
- *The instrument should be operable at temperature range from +5°C to 80°C
- Control system should be based on Microprocessor digital PID
- *Heating mode should be of heat or IR or combination of both or other advance technology
- The instrument should have LED display
- Timer should extend to 99 hrs 59 min or better
- *Capacity for 1.5ml micro-tube (more than 20), 15ml tubex 12nos, 50ml tube x 8nos , 96 well micro-titer platex 2nos
- *Speed range should not be less than 2,000rpm
- *Pump should be chemical resistant or PTFE coated
- Ultimate pressure should be at least 8 mbar
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

Item No. 15 Tissue Homogenizer (EMD- Rs. 6,000)

● **Features:**

- *3D Rotating High Speed Motion.; 10 Programmable memory setting.
- *A wide range of rotation setting from 4,000rpm to 5,800rpm, increment 100rpm.
- *No brush particle generation and no brush replacement.
- Easy to monitor the disruption process through the clear lid.
- Simultaneously homogenize 1.5-2 ml, 5ml tubes.

● **Technical Specification**

- *Speed Range: 4000~5800 rpm (in steps of 100 rpm); Run Time: 1~90 s (in steps of 1 s)
- Programmable: 10 Saved Programs; Number of Cycles: 1 – 99
- Display: Organic-LED, High light and no visual angle limit
- *Number of Samples: 1~24 samples
- *Running Noise: <70db
- Pause Time : 0-9 minutes 59 seconds
- Power Supply: 100-230VAC / 50-60Hz
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.
- All essential requirements/accessories for smooth functioning of instruments should be quoted.

Item No. 16 Mortuary Cabinet for Animals (Temp. Range Upto -40°C),(EMD- Rs. 12,000)

- *High-tech double walled microprocessor controlled, solid-state cooling Mortuary Chamber. Specially designed for storing wild Animals
- *Dimension of the chamber: 4 feet width x 3 feet height 7 feet length or better
- Robust construction Corrosion free outer & inner chamber; made of Heavy Gauge Stainless Steel (304 grade approx)
- *Durable coaxial blower for forced air circulation to maintain temperature uniformity in the chamber to be supplied with heavy duty adjustable trays for storing animal body placed on rollers, can hold weight approx. 250 kg.
- *High grade polyurethane foam INSULATION between outer and inner chamber
- *Finned tube evaporator lie in the air circulation path by **ISI marked Compressor/Condensing Units** CFC free & R-134 a eco friendly refrigerant, low noise level (≤ 60 dB) and minimal vibration.
- Control panel with all controls and circuitry at the top fitted with Temperature controller cum Indicator fitted with audio visual alarm for high & low temperature with LED display.
- *Heavy duty caster wheels for easy portability.
- *Unit must be European CE/FDA Approved & to be supplied with ISO 9001 Certified Company having ISO 13485 : 2012 quality management system
- Operating Voltage: 220/440 Volts AC (50 Hz).
- *Voltage Stabilizers ISI mark 4KVA
- * **Chamber Capacity** Single Animal (tiger) /Two Animals (tiger)
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

Item No. 17 Laparoscope_(EMD- Rs. 75,000)

- *Laparoscope for wild animals with Telescope forward-oblique 0° - 30° enlarged view, with outer diameter 2- 5 mm, length 27-29 cm and autoclavable. Having rod lens system and fiber optic light transmission.
- ***Essential Accessories to be supplied with Laparoscope**
- Trocar, size 5-15 mm , length 8.5 cm with multifunctional valve & Insufflation stopcock.
- Telescope stopper size 11-5mm, with minimum 10 in a autoclavable package.
- Cannula , size 6 mm, working length 8.5-15 cm with silicon leaflet valve.
- Trocar with pyramid tip, size 5-6mm, length 5-15 cm with multifunctional valve & Insufflation stopcock.
- VERESS pneumo-peritoneum needle , length 10 cm, with spring-loaded blunt stylet and LUER-Lock- autoclavable
- Reducer 11mm to 6mm size clip-on type = 04
- Grasping forceps, rotating, size 5 mm, length 30-40 cm with multiple teeth, fenestrated, single action jaws.
- Scissors with serrated double action jaws, curved with spoon blades size 17 mm, 360 deg sheath rotation, size 5 mm, length 36 cm.
- Dissecting and grasping forceps with long double action jaws, 360° rotating sheath, size 5 mm, length 30-40 cm including accesories.
- Bipolar grasping forceps, insulated, fit for coagulation, diameter 5 mm .

* **Light Source-** High Intensity Xenon lamp 175 watt, 15 V, colour temperature (approx.) 6000K, with mechanical dimmer. The visible light spectrum of lamp of 400 to 700 NM. Certified to- IEC 601– 1, CE label according to MDD, protection class 1/BF

- Xenon-Spare-Lamp, 175 Watt, 15 Volt
- Fibre Optic Light Cable, heat resistant

Insufflation Unit- *Electronically controlled gas refill.

- Gas flow/minute 0-20 lit, pressure 0-100mm of Hg. ; intra-abdominal pressure gauge -0-100 mm of Hg .
- *Capability for usage in laparoscopy and advance arthroscopy procedures .
- Keys for precise pre-selection of preset values, built in optical & acoustic signals in case of overpressure.
- Complete with all connecting tubings, hose pipe 1.5-2 meter long, regulator and 4.5-5 kg CO2 cylinder.

Camera System- Digital, single-chip medical-video-camera compatible with all rigid and flexible scopes.

- *Image sensor of ½” or lower CCD-chip, picture elements- approx 752 (H) x 582 (V per chip (PAL) , resolution minimum 450 lines (horizontal) , exposure control of 1/60 sec- 1/10000 sec, signal-to-noise ratio: > 50 dB & min. sensitivity of 3-5 Lux (f =1.4), Lens with integrated zoom lens of f=25-50mm . Instrument coupling device should be compatible with all rigid & flexible endoscopes with standard eyepiece.
- Adaptable to an operating microscope by means of a special quick adapter, camera head fully soakable for sterilization & also gas sterilizable and sterrad compatible.

High Frequency Surgical Unit- Power Output 180-240 W or more with coagulation degree pre-selectable in several stages like soft & standard coagulation,

- *voltage-controlled cutting, auto-stop & auto-start function,
- *option of activating HF functions either via footswitch or switch on the handle.
- Complete with two pedal footswitch, monopolar & bipolar cords, neutral electrode of conductive silicon.
- LCD monitor 18" -20"
- Mobile cart having 4 antistatic dual wheels, locking brakes, 1 fixed shelf.
- *Manufacturer must be EC certified for Full & Production Quality assurance, ISO -13485: 2003 & ISO -9001:2008 certified for quality standards.
- *Manufacturer should quote FDA , CE,UL or BIS approved product, minimum three years from this ITB.
- *Product should have IEC safety standards where ever listed . All products should be IEC 601-1, CE certified according to MDD.
- Manufacture should have minimum 10 installations in Government Institutions including Veterinary Universities/ICAR centres in India.
- Must have a veterinary training centre in India.
- All units must be covered under standard warranty for a period of 24 months from the date of installation.

- The core operating endoscope like telescopes, endovision , single chip camera, light source, and other units should be from single manufacturer for system compatibility.
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

Item No. 18 Digital Portable X-ray machine along with attachment for big cats (EMD- Rs. 1,00,000)

- Light weight design for veterinary X-Ray equipment especially (for effective use on Tiger, Leopard and Sambhar etc)
- *Dedicated inbuilt graphic anatomical program for animal.
- *Inbuilt and preinstalled anatomical program APR with anatomical program APR integrated in digital and permitting program of any radiographic parameter needed for study viz. workstation, KVP, mA, mAs, exposure time, AEC, area and density.
- Light weight of standalone X-Ray equipment X-Ray Mobile machine with storage and transportation trolley facility.
- *8kw ultra high frequency approx.300KHz X-Ray generator with kVp range in 1kVp steps from 40 to 115 approx.
- *Very high accuracy of $\pm 5\%$ with minimum 12mA stations.
- *Inbuilt facility with automatic flexible exposure time.
- *mAs range from approx 0.1 to 250 mAs with minimum 34 stations.
- *Target ange of approx. 120° with Red Lazer Pointer.
- Automatic regulation of power adaptation to power line conditions working on 220V AC through 240V AC/DC 24V 2A from Power Supply Unit.
- *Portable and wireless direct digital radiography imaging flat panel detector system.

Image Format

- Active Area
Approx. 350 (H) x 43 (V) mm (14" x 17")
- Pixel Matrix
2.466 (H) x 3.040 (V) approx.
- Pixel Pitch
140 μ m approx.

***Performance**

- Limiting Resolution
Approx. 3.7 lp/mm Typ.
- MTF (2.0 lp/mm, 70 kVp, 1x1 approx. 36% Typ)
- A/D Conversion
14 bit approx.

***Rating**

- Energy Range
40-150 kVp
- Maximum Entrance Dose (Low Gain)
4 mR/ frame

***Interface**

- Data Output
Min.16 bit Digital Output Ethernet (1000BASE - T)
- Command Control

Ethernet (1000BASE -T)

- c) X-Ray Synchronization Control
External/ AED

Hardware accessories required

- a) *Fields condition usable Laptop of reputable manufacturer with touch screen control.
- b) Motherboard Intel Core 2 Duo P7800, 2.53GHz, 1066 MHz, 3M L2 Cache, Dual Core 2GB, DDR2-800SD RAM, 2 Dimm for Latitude or better.
- c) Internal Keyboard, English and Backlit.
- d) Storage capacity of 128GB (or more) with Encrypted mobility solid state HDD.
- e) Display on 14.1" (or more) wide screen WXGA rugged touch screen LCD.
- f) * Pre installed WINDOWS Operating System with Microsoft Office Software with facility to work in .JPEG, .BMP, .PNG, .PDF file formats and ability to accept future software.
- g) Connectivity with internal MDC modem, media edit software, WLAN 1397½ mini card, resource DVD with diagnostics and drivers for PC/Laptop.
- Built in interface panel with PACS system supplied in soft cover carrying case with interface panel cover.
- *Certifications complying CE marked to Council Directive 93/42/EEC, ISO 13485, ISO 14001/ISO 9001/ EMAS/ UL. All manufacturer certifications to be produced with the tender documents.
- On-site service network for maintenance and repairs with free of charge facility to train the user on equipments working and use at the time of installation.

Item No. 19 Digital Camera with Image Analysis System (EMD- Rs. 30,000)

- ***Research Microscope** with Digital Camera and Image analysis system Stand for transmitted light, Light Emitting Diode [LED] illumination (high quality) equivalent to 100W, with height adjustability of focus knobs, with stage carrier and central condenser holder for vertical adjustment, right- & left-hand operation and clamp screw, with adjustable height stop , Mains 90-250V, commutable 50/60 Hz. 3 step focus drive for coarse, medium and fine focusing, focus torque adjustment and adjustable, focus stop, with focus knobs coarse and fine on both hands, Objective nosepiece for 5 position.
- *Ergo Stage for right- or left-hand operation. Stage plate with ultra hard ceramic surface, travel range approx 76mm x 25mm, with vernier reading, Condenser with color coding for magnification for BF / Ph/ DF application.
- *Trinocular Phototube with 0-30° viewing angle, with inter pupillary adjustment 55-75 mm, with constant focus and beam splitter positions vis/phot: 50/50%, fixed, eye piece plan achromate / HC PLAN 10X adjustable for graticules; Objective 5x/0.12; Objective 10x/0.30; Objective 20x/0.50; Objective 40x/0.75; Objective 100x/1.30., microscope should be upgradable to fluorescence, DIC, phase contrast and all advance microscopic features, eye guard, dust cover. supplied with all accessories, Service support is essential
- ***Microscopic Camera** Compatible advanced research trinocular microscope, to be attached with the microscope for image analysis and photography.
- *CCD Camera with 1 inch to 2/3 inch size imaging sensor, resolution of 3-6 megapixel, monochrome/color image production, progressive scan, smooth image display, excellent colour production as near live image, fitted with cooling peltier or semiconductor mechanism, easy focussing supplied with capture software and focusing C mount adapter for above microscope,

operating system based on windows. Installation and Service should be the responsibilities of firm

- **Image analysis** – Live on image, Perform measurements, interactive and automatic, calibration feature, image processing, comparing current and previous image all kind of morphometric analysis like Linear distance, Curved length, Area, Angle, Count, Baseline distance, Parallel line distance, Circles, Dual Circles, Segments, Sectors, Rectangles, Triangles , point counting, option for intensity or grey scale measurement, report generation, data exportMS Excel or other format.
- NOTE – *Microscope, Camera and S/W should be from one manufacture; objective of 2- 2.5 x, ergonomic eye tube option should be provided as optional requirement; all required hard ware like PC (HP I5 PC with 500 GB HDD and 4gb RAM 18.5” TFT/LED monitor, DVD, RW, original window 8 pro sw0 should be supplied, should be provided with required capacity online UPS, International quality certification should be available and should have on site service support.
- *The international and national certifications like CE/IEC/ISO should be submitted along with technical bid.

Item No. 20 ROTARY VACUUM EVAPORATOR (EMD – Rs. 12000)

- *Rotation speed: should have maximum speed upto 300 RPM.
- *Bath temperature should be maximum approx 100 °C for water filling and maximum or above approx 180 °C for oil filling.
- *Basic unit with Chiller and Vaccum pump facility
- Should have absolute pressure measurement with maximum back pressure as 1 bar.
- *Evaporating capacity: Should be maximum 3.5 L/h (water) or better.
- Safety features should include overheating protection, fuse, thermal low liquid protector etc.
- *Evaporating flask should be pear or round flask of 1-2 liter capacity.
- *Speed control should be programmable
- *Should be digitally set with LED Display
- should be supplied with UPS: 2 kVA

Item No. 21 COMPUTERISED ORGAN BATH APPARATUS (EMD – Rs.36000)

- *High quality, fully automatic four chamber tissue bath systems including tissue chambers, Pre heating coils and Gas diffusers with power pump & temperature controller with variable speed control system for each chamber.
- *Compact design bath of 10-15 lit. capacity
- *Capacity per vessel should be 100-200 ml
- *Each tissue chamber should have provision for an adjustable gas diffuser for oxygenation.
- *Should have automatic filling and emptying of micro processor controlled system.
- *Should be provided with an extra tissue chamber of 10 ml capacity.
- *Should have microprocessor based transducer calibration system.
- Should have an option for electrical stimulation in the tissue.
- The system should be supplied with a branded computer system with original windows 7 OS, antivirus and printer.
- Should be provided with online UPS: 4 kVA

Item No.22 MICRO CENTRIFUGE (EMD – Rs. 6000)

- *Speed should be Maximum 15000 RPM or better
- *Should have timer between 0 to 30 minutes or better
- *Rotors should have 12 x 1.5 or 2.2 ml tube capacity
- Safety features include door interlock
- *Should be provided with adapter for 0.2 and 0.5 ml micro tubes
- Should have push button display & automatic lid release.

Item No. 23 MICROWAVE DIGESTION SYSTEM : (AS ACCESSORY OF ATOMIC ABSORPTION SPECTROPHOTOMETER UNIT) (EMD – Rs.54000)

- Should have all sensors, including pressure and temperature sensing devices located within the microwave cavity with touch screen display.
- Should have integrated printer facility.
- *Instrument should have 8-24 vessels.
- *Volume of vessel should be in range of 50-100 ml
- *Operating pressure should be 500-800 psi.
- *Temperature should be 250-300°C.
- *Outer vessel material should be explosion proof.
- *Should have high resolution LED display for temperature and pressure curves simultaneously.
- Should have powerful magnetic stirring system for vessels.
- *Safety features should include door safety interlock, anti explosion continues temperature monitoring and control.
- Should be supplied with UPS : 5 kVA

Item No. 24 SOLID PHASE EXTRACTION UNIT: (AS ACCESSORY OF HPLC UNIT) (EMD - Rs.15000)

- *The solid phase extraction unit (SPE) should contain standard vacuum manifold of 6-12 ports with individual flow control stop-cocks in glass chamber along with guide needles.
- *The extractor should automatically rinse the sample with the extracting solvents and wash all retained analysts on the disk.
- *The unit should contain collection racks and shelves, vacuum gauge, valve assembly, Vacuum pump (oil free diaphragm vacuum pump) with retaining clips plugs for each port.
- *Should be capable of performing Liquid-liquid extraction can be performed.
- Should be provided with SPE vacuum pump traps kit, drying attachments with adaptors should be provided.
- *SPE cartridges with normal/reverse phase along with transport adapter with SPE C18 cartridges capacity of, 200mg, 3mL and 6ml (30 packs each).
- Should have drying attachment with nitrogen cylinder (99.99% purity).
- Should be provided with UPS: 2 kVA

Item No. 25 LYOPHILIZER (EMD – Rs. 15000)

- *Condenser Temperature should be -50⁰ C to -80°C
- *Lowest system vacuum should be less than 30mT
- *Max. Condenser Capacity should be 10 liters
- *Max. Deposition rate should be 0.5 liter per Hr.

- *Max. Ice Condensing Capacity should be approx. 12 liter.
- *Temperature Control should be microprocessor based digital temperature controller
- CFC free refrigerant is required
- *Sample tray- min. 200 mm with four layers
- Should have display as LCD with touch control
- Should be provided with UPS: 2 kVA

Note :

1. The specification of instruments/items marked with star (*) are essential specifications to be complied.
2. The instrument/item No. 9-11 to be quoted for F.O.R. Veterinary College Mhow.

Appendix B

Format for Price Bid (Submitted on Letter head of firm/firm/tenderer)

Name of Instrument

Make of Instrument

Model of Instrument

Price of Instrument including of all taxes except VAT/CST	X
VAT/CST (if any)	Y
Total	X+Y

Seal & Signed

Appendix C

Compliance format (Submitted on Letter head of firm/firm/tenderer)

S. No.	Required specifications of the instrument as per tender	Specifications as per the make and model of the instrument quoted by the firm
1		
2		
..		

Seal & Signed

Schedule of tender Process

S. No.	Particular	Date
1	Date of publication of tender notice	05-12-2015
2	Last date for submission of tender in Animal Biotechnology Centre	05-01-2016
3	Date of opening of tender at Animal Biotechnology Centre (in presence of tenderer or his representative)	8-01-2016
4	Distribution of tender to different units for preparation of comparative chart	8-01-2016
5	Submission of comparative chart to Animal Biotechnology Centre	15-01-2016

6	Meeting of University level technical committee (university/DRS conference hall)	18 to 22 Jan. 2016
7	Notification of successful tenderer for different items in the website	23-01-2016
8	Date of CPC meeting (university conference hall) for price bid opening (in presence of tenderer or his representative of successful tenderer)	30-01-2016