

**Maharshi Dayanand University Rohtak**

**Tender Notice**

Sealed tenders super-scribe as “tender for analytical instruments” addressed to Director, ACBT, M.D.University, Rohtak are invited for analytical instruments- Millique Water System, RT- PCR, Gel/Chemi DOC, Centrifuge Refrigerated Floor Type, UV Vis Double Beam Spectrophotometer, Speed Vac, Lypholizer, Liquid Scintillation Counter, ELISA READER with WASHER, High pressure Homogenizer, Spray Dryer, Rising Film Evaporator, Liquid Nitrogen Plant along with demand draft of earnest money @2% of quoted value in favour of Finance Officer, M.D.University Rohtak latest by 10-2-2009. Detail specifications of equipments and other terms & conditions are available at University website i.e. [www.mdurohtak.com](http://www.mdurohtak.com) or ACBT office. The tenders will be opened on 11-2-2009 at 11am in the Centre.

**REGISTRAR**

**Advanced Centre for Biotechnology  
M.D.University, Rohtak-124001  
Haryana**

**TERMS AND CONDITIONS**

1. Sealed tenders super scribed as “Tender for scientific Instruments” should be sent.
2. The rates or the quotations/tender are to be sent in an envelop and this is put on another envelop which should be sealed.
3. The rates of S.T/C.S.T./Excise/Custom duty, packing, forwarding, installation and other charges must be specified. The charges etc. not specified in the tender shall not be paid. The rates should be quoted F.O.R. Rohtak
4. The rates of insurance, if any, should be specified. the firm will be required to submit original payee receipt along with the bill
5. Every tender shall be accompanied by earnest money @2% demand draft of quoted value in favour of Finance Officer, M.D.University Rohtak. In case the supplier backs out, the earnest money deposited by him shall be forfeited.
6. The tender received without earnest money, or after the due date shall not be entertained except with the special approval of the Registrar.
7. 100% payment will be made on receipt and inspection of goods to ensure the specification and their good condition.
8. The rates accepted by the University shall be applicable upto .....and the supplier shall have to make supply during the period as and when required.
9. Please state the time period within the items will be supplied. Delay in supply will be liable to pay as compensation an amount equal to one percent or such small amount as the Registrar may decide for every day.
10. Guarantee period of the instrument must be mentioned. Minimum warrantee should be two years.
11. The tender shall be opened by the Purchase Committee in the presence of supplier and the committee reserve the right for negotiation thereafter if considered necessary.
12. Discount, if any, is to be given with the quotation/tender.
13. Any other terms and condition must also be specified.
14. The Registrar reserves the right to reject or accept any offer without assigning any reason.
15. All disputes subject to Rohtak jurisdiction.
16. Users list and various certificates should be also mentioned. Manufacturers and authorized dealer can quote the tender.

**NOTE:-** University may ask for demonstration, whenever required. University stands exempted from the payment of Central Excise Duty/Central Import Duty, so quote rates in view of this. Necessary certificate will be supplied by the University when required.

**The tender for the following instruments with specification are required:-**

1. Name of Instrument- **pH METER** Qty. required- 03  
**Specification** – Micro Controller Based, pH Range= 0 to 14 pH, Resolution= 0.001pH,  
Stability= 0.002pH/hr, Relative Accuracy=  $\pm 0.002\text{pH} \pm 1$  Digit,  
Buffer Deviation=  $\pm 0.5\text{pH}$ , Temp. Compensation= Auto,  
Temp. Range= 0 to 99.9°C, Temp. Resolution= 0.1°C, Temp. Accuracy=  $\pm 0.5^\circ\text{C} \pm 1$  Digit  
Display= Two line, 20 character alphanumeric LCD,  
Annunciation= Individual LED with keys for calibration of pH, ABS mV, REL mV and print.  
.....
2. Name of Instrument- **OVEN UNIVERSAL** Qty. Required- 06  
**Specification** –Temp. range- ambient to 250°C. Heating elements on three side, Adjustable shelves,  
Air circulation Fan & Digital Temp. Controller Indicator,  
Size= Inside Chamber- 605X605X910mm, outer 812X965X1295mm, Capacity 336 Ltrs  
.....
3. Name of Instrument- **ELECTRONIC BALANCE** Qty. Required- 04  
**Specification** – Weighing capacity= 120g, Readability= 0.0001g, Repeatability= 0.0001g, Linearity= 0.0002g,  
Stabilization time= 3.5 sec., Pan Size= Ø85mm, Calibration= Automatic,  
Display type= LCD, Size= External- 249x330x328mm, Magnetic force restoration technology, Unique easy access door  
system, One touch calibration, 200 weighing memory, Auto zero setting,  
Multiple weighing unit i.e. %, Pcs, g, mg, oz, ct etc.  
.....
4. Name of Instrument- **INCUBATOR UNIVERSAL** Qty. Required- 04  
**Specification** – Made of SS 304, Temp. ambient to 70°C, Heating elements are placed in rib sat the bottom and sides,  
Air circulation Fan & Digital Temperature Controller Indicator,  
Size= Inside Chamber- 605X605X910mm, outer 812X965X1295mm, Capacity 336 Ltrs  
.....

5. Name of Instrument- **WATER BATH** Qty. Required- 06  
**Specification** – Made of SS 304, Temp. Range= ambient to 100°C, vThermostatic control with accuracy of  $\pm 0.5^\circ\text{C}$ , Size- inside Chamber= 330X300X175mm, outer= 455X405X430mm, Capacity 18 Ltrs
- 
6. Name of Instrument- **VERTICAL AUTOCLAVE** Qty. Required-04  
**Specification** – Complete made of SS 304,  
 Fitted with automatic cutoff devices for elements for general safety, Fitted with Indfoss Piezostat.  
 Size- Dia. Depth- 450X600 mm, Outer Dimension-610X812X1270 mm, Capacity 98 Ltrs
- 
7. Name of Instrument- **VORTEX/CYCLO MIXER** Qty. Required- 12  
**Specification** –Variable speed mixer, Speed regulator with Adaptor (CM-01/01) for mixing upto 18 Micro tubes and (CM-01/02) useful for tubes, bottles or flasks upto 250ml.
- 
8. Name of Instrument- **MAGNETIC STIRRER** Qty. Required- 12  
**Specification** – Digital speed indicator for display of stirring speed, PMDC motor for higher torque even at low speeds, Better low speed stirring even with small volume. Size= WxDxH=180x220x150mm, Stirring Paddle=13x50mm
- 
9. Name of Instrument- **HOT PLATE** Qty. Required- 06  
**Specification** – Electronic Digital temp. Controller, Maximum temp. range= 350°C - 370°C  
 Size= 300X455mm, Outer dimension- 330X482X300mm
- 
10. Name of Instrument- **CENTRIFUGE** Qty. Required- 06  
**Specification** – Stepless speed regulator with zero start interlock, Digital speed indicator, Dynamic brake, 0-99 minutes digital count down timer, Imbalance detector with cutoff, Max. Speed with rotor 4x100ml= 11,100rpm, 6x50ml= 12,100rpm, 12x15ml= 12,300rpm, 24x 1.5ml= 17,300rpm. Complete with angle heads and polypropylene tubes.
- 
11. Name of Instrument- **VACUUM OVEN** Qty. Required- 02  
**Specification** – Made of SS 304 grade, Temp range= Ambient to 130°C up to 300°C, Microprocessor based PID digital temp. Controller, with vacuum pump  
 Size-300DiaX600mm (Depth), Capacity= 43 Ltrs, Outer Dimension-736X890X838mm
- 
12. Name of Instrument- **MICROTOME** Qty. Required- 01  
**Specification** – The wheel counter balanced with locking device, Automatic feed and release mechanism, Feed range= 1 to 50 microns in step of 1 micron each in controlled smoothly by “DIAL CONTROL” in the rigid front position, Complete with 120mm knife with back and handle in case, 6 block holders, honing stone, Ball and flange type object holder for positioning of the object at desired position, with different size -L-Mould flange, Spare microtome knife and block holder.
- 
13. Name of Instrument- **HIGH TEMPRATURE OIL BATH** Qty. Required- 01  
**Specification** – Inside chamber made of SS 304, Temp. range 50°C to 250°C, Microprocessor based PID digital temp. Controller cum indicator with accuracy  $\pm 2^\circ\text{C}$ , With stirrer, Diffuser shelves, Size- Inside Chamber-355X355X250mm, outer 762X711X533mm, Capacity= 32 Ltrs
- 
14. Name of Instrument- **ELECTROPHORESIS Horizontal Midi Sub System** Qty. Required- 14  
**Specification**:-Basic Unit-1No., Platinum electrode assembly removable-2No., Connecting cord-2No., Gel running tray130x130mm- 1No., Gel platform 130x65mm-2No., Gel running tray 65x60mm=4No. 13 well comb 1.5mm=1No., 8 well comb 1.5mm=4No., 3 well preparative comb 3.0mm=1No. **Power supply- Programmable pS 500/500V/500mA**
- 
15. Name of Instrument- **ELECTROPHORESIS Vertical Midi gel System** Qty. Required-14  
**Specification**:-for one 16x14cm gel basic unit-1No. Includes spirit level, Rubber gasket 1 no. fixed Platinum electrode assembly removable 2No. Glass plates notched and rectangular 2 -set, 13 well Teflon comb 0.5mm -1No. 1mm-1No., 1.5mm-1No., Teflon spacers 0.5mm-2No.,1mm-2No., 1.5mm-2No., Clamp and screws-2sets, Leveling screw-3No., Lid-1No.,Connecting cord-2No.,
- 
16. Name of Instrument- **ELECTROPHORESIS POWER SUPPLY 100,200,300V DC** Qty. Required- 07  
**Specification**:-  
**CONSTANT VOLTAGE MODE:** Range:- Three overlapping 100,200, 300V DC, Load:- corresponding to 50mA max., Accuracy:-  $\pm 2\%$  of reading  $\pm 1$  digit, Settable Voltage:- 5 to 300 Volts, Display resolution;- 1 Volt  
**CONSTANT CURRENT MODE:** Range:-1.5mA to 50mA, Load: - corresponding to 300V max., Accuracy:-  $\pm 2\%$  of reading  $\pm 5$ digit, Settable Current:- 1.5 to 50mA within 0.5mA, Display resolution;- 0.1 mA

- .....
- 17. Name of Instrument- ELECTROPHORESIS POWER SUPPLY 300, to 500V DC** Qty. Required- 07  
**Specification:-** LED Display for voltage and current readout, Accuracy:-  $\pm 2\%$  of reading  $\pm 1$  digit,
- .....
- 18. Name of Instrument- WESTERN BLOT/E-BLOTTER SYSTEM** Qty. Required- 02  
**Specification:-** Effective for electro-transfer application,  
E-Blotter buffer tank dimension= LxWxH=20x13x16.5cm,  
E-Blotter module dimension= LxWxH=22x6.8x11cm,  
E-Blotter transfer gel size dimension= WxH=11x7.5cm, and  
Semi dired transfer cell and system with all accessories, Size 24x16 cm, Gel Capacity 4, Buffer requirement 200ml
- .....
- 19. Name of Instrument- HYBRIDIZATION CHAMBER** Qty. Required- 02  
**Specification:-** Capacity=44ltrs, Temperature controlled oven containing rotisserie or shaking platform
- .....
- 20. Name of Instrument- STUDENT MICROSCOPE** Qty. Required- 30  
**Specification –**  
1. Body:monocular.Die castbody,inclinable up to a horizontal position 90degree  
2. Magnification : 100X~1000X(1500X)  
3. With provision of illumination through attach lamp system
- .....
- 21. Name of Instrument- SPECTROPHOTOMETER** Qty. Required- 4  
**Specification:-** Wavelength= 320-990nm, Absorbance Range= -0.3 to 2.500Abs  
Spectral Bandwidth= 5nm, Wavelength Resolution= 1nm, Wavelength display=Digital, Wavelength Accuracy=  $\pm 2$ nm  
Photometric Resolution= 0.1%T, Photometric Accuracy at 1 Abs=  $\pm 0.005$ Abs  
Modes=% T, Abs, Concentration & Factor, Photometric Readout= 4 Digit LED Display  
Grating= 600 lines/mm, Detector= Si-Photo-Diode, Source= Halogen Lamp 12V-50W  
Sample Holder= 10mm path length, Two position Manual Sample Changer
- .....
- 22. Name of Instrument- LIQUID NITROGEN CONTAINER**  
**Capacity= 20 liter,** Qty. required- 03  
**Capacity= 50 liter,** Qty. required- 03
- .....
- 23. Name of Instrument- 4°C CHAMBER** Qty. Required- 03  
Specifications- Capacity about 300 Ltrs, Vertical, Alarm and safety function, precise temp. Control  
Estimated Exterior Dimension (WxDxH) =600x680x1835mm  
Estimated Interior Dimension (WxDxH) =520x490x1150mm
- .....
- 24. Name of Instrument- DEEP FREEZE -20°C** Qty. Required- 03  
Specifications- Capacity 300 Ltrs, Vertical, built in condenser give low energy consumption,  
Pull out drawer and Fast freezing, Digital temp. Display, CFC free, Heavy duty compressor,  
Estimated Exterior Dimension (WxDxH) =600x680x1835mm,  
Estimated Interior Dimension (WxDxH) =520x490x1150mm
- .....
- 25. Name of Instrument- MUFFLE FURNACE** Qty. Required- 01  
**Specification–** Working Temp.= 900°C, Microprocessor based PID temp. indicator cum controller, Light weight with ceramic wool insulation, Outer casing made of double walled thick P.C.R.C. sheet duly painted, Heating elements made of KANTHAL “A-1” wire Backed by high temp. cerwool insulation, Muffle Size-150X150X300mm,
- .....
- 26. Name of Instrument- KJELDHAL DIGESTION UNIT** Qty. Required-02  
**Specification –** Estimation of Nitrogen contents by digestion of 300 and 500ml capacity flasks provided with lead fume duct and pair of hangers for six tests,
- .....
- 27. Name of Instrument- KJELDHAL DISTILLATION UNIT** Required-02  
**Specification–** Useful for distillation purpose for 300 and 500ml capacity flask provided with condenser rack, for six tests,
- .....
- 28. Name of Instrument- SOXHLET EXTRACTION UNIT** Qty. Required-02  
**Specification–**Ideal heater for extractors of Soxhlets suitable for flasks of 50-500ml, Having mild steel sheet housing, two vertical and two horizontal rodes with adopters and screws to hold the flasks.
- .....
- 29. Name of Instrument- BUTYRO REFRACTOMETER** Qty. Required-04  
**Specification–** Double Scale one is oil scale( Butyro Scale) having range of 0 to 100 and accuracy of  $\pm 0.1$  read directly on the micrometer, and other is sugar scale range of 50-80%with an accuracy of  $\pm 1$  read directly on scale

- .....
30. Name of Instrument- **ABBE REFRACTOMETER** Qty. Required-04  
**Specification**– For measuring refractive index, Range 1.3 to 1.7 with an accuracy of 0.001 direct on scale and 0.0001 by estimation, Sugar percentage range of 0 to 95% with an accuracy of 1% on scale and 0.1 by estimation can be measured, Complete with test piece, contact liquid and thermometer in wooden cabinet
- .....
31. Name of Instrument- **HAND REFRACTOMETER -0-32%** Qty. Required-04  
**Specification**– For measuring the sugar concentration of fruit juice, Jams, ERMA Type  
Name of Instrument- **HAND REFRACTOMETER-28-62%** Qty. Required-04  
**Specification**– For measuring the sugar concentration of fruit juice, Jams, ERMA Type  
Name of Instrument- **HAND REFRACTOMETER- 58-92%** Qty. Required-04  
**Specification**– For measuring the sugar concentration of fruit juice, Jams, ERMA Type
- .....
32. Name of Instrument- **INFRA RED MOISTURE BALANCE** Qty. Required-01  
**Specification**– Capacity-10gm Electronic regulator, accuracy 0.2% by direct reading, 0.1% by estimation, Complete with “L” bend thermometer, 10 disposable pans, one twizor, automatic minute timer
- .....
33. Name of Instrument- **PULPER MACHINE** Qty. Required-01  
**Specification**– Designed for extracting the pulp of fruits and vegetables, Central pulping unit of the machine consists of a pair of brushes fixed on stainless steel shaft and one stainless steel sieve, gap between sieve and the brushes can be adjusted, Sieve is available in perforations of different sizes, Spare different size sieves, All contact parts are of S.S. 304 grade, Capacity 100kg/hr fitted with ½ H.P.Motor
- .....
34. Name of Instrument- **FRUIT CRUSHER** Qty. Required-01  
**Specification**– Designed for crushing stoneless fruits and vegetables, material is fed into stainless steel hooper which feeds the product into the crushing drum, which consists of stationery blades and rotary beater which crushes the loaded products.  
Capacity=100kg/hr with 0.5 H.P.Motor
- .....
35. Name of Instrument- **CROWN CORKING MACHINE** Qty. Required-01  
**Specification**– Hand Worked, Light duty model
- .....
36. Name of Instrument- **GERBER CENTRIFUGE** Qty. Required-01  
**Specification**– Electrically operated with timer 0-5 Minutes, Testing capacity-12 tests, Mechanical Break for stopping
- .....
37. Name of Instrument- **MINI CREAM SEPERATOR** Qty. Required-01  
**Specification**– Dynamically balanced bowl having a separation capacity of 25ltrs/hrs, Milk tank capacity 5 Ltrs approximately, Bowl and spouts made of SS304 with built in electric motor
- .....
38. Name of Instrument- **COLLOIDAL MILL** Qty. Required-01  
**Specification**– Suitable for fine grinding and homogenizing of liquids or pastes like juices, squash and ketchup etc., All contact parts are of S.S. 304 grade stainless steel, Capacity 100/hr fitted with ½ H.P.Motor
- .....
39. Name of Instrument- **DEHYDRATOR/ TRAY DRYING OVEN** Qty. Required-01  
**Specification**– Suitable for dehydration of fruits and vegetables, tray type with 12 trays capacity, supplied with Aluminium trays, double walled unit mounted on a sturdy angle iron frame, inner and outer made up of heavy M.S. sheet, inner body is painted with high temp. aluminium paint, gap between two walls is filled with high-grade glass wool to minimize thermal loss, temp. range from ambient to 150°C, temp. controlled by Microprocessor based PID Digital temp. indicator-cum-controller with accuracy of ±1°C, forced air circulation so as to ensure uniform heating throughout the inner chamber, ventilation provided with adjustable opening at the top to exhaust the fumes or vapours.
- .....
40. Name of Instrument- **ICE CREAM MACHINE** Qty. Required-01  
**Specification**– Suitable for making Ice Cream and filling Soft Cones, with having capacity of 1.5 Gallons & when 2.5 Ltrs of mix material is poured in the machine it will give preparation of 5 Ltrs, Whole body is made of S.S., compressor make KIRLOSKAR, Machine fitted with air cooled condenser fan motor and filter is included for filtration of gas inside.
- .....
41. Name of Instrument- **HIGH SPEED REFRIGERATED CENTRIFUGE Floor Type** (2)  
**Specification:-**
- |  |  |
|--|--|
| 1. Max. Speed- 22000rpm/30000rpm, rcf-98000, | 2. Max. Capacity: 4x1000ml   |
| 3. Temp. Range: -20°C to +40°C,              | 4. Accurate temp. maintenance without ATC                              |
| 5. Brushless A/c Induction Motor             | 6. Speed Preset and display of +1 rpm                                  |
| 7. 99 Programmable Memory                    | 8. Digital display of RPM, RCF, Time, Temp;Acc/Deacc. Time, Rotor No., |
| Self Test fw2 dt,                            | 9. Rotor of Different Sizes i.e.-24x1.5ml, 12x15ml, 8x50ml, 6x250ml    |
- .....

**42. Name of Instrument- REAL TIME PCR**

(1)

**Specification:-**

1. An automated integrated system for both real-time PCR and post-PCR (end-point) analysis using in-built Peltier based PCR machine.
2. The normalization of reaction due to non-PCR related fluctuations should be possible by using any calibrated dye.
3. System should support applications including absolute quantitation, Relative quantitation, multiplex-PCR, allelic discrimination (SNP), melt curve analysis as well as pathogen detection and plus/minus assay using internal positive control.
4. The excitation source should be LED and the detection system should be photodiode.
5. The system should do multiplexing for atleast 3 colour and should have 48 wells.
6. The hardware must provide Peltier thermal cycling for Fast-PCR as well as Standard-PCR run in the same block.
7. The system should have temperature range of 4 °C-100 °C with peak block ramp rate for heating as well as cooling exceeding 4.5°C/second.
8. System should support reaction volume 10-30 µL and universal thermal cycling conditions to eliminate optimization of PCR conditions for running the templates from different sources simultaneously.
9. The system should support micro well plates, individual tubes and 8-tube strips.
10. The system should provide Touch Screen LCD feature to avoid dependency on computer for operation. However, it should be possible to use computer for system control, operation, analysis, net-working of multiple system and a USB port for data export to Power point, Excel or JPEG file formats.
11. The Dynamic range should be 9 logs of linear dynamic range. The data collection and instrument control software should provide multicomponenting algorithm for deconvolution of multiple dyes, and a dedicated licensed full version software for primer and probe design must be included in the supply.
12. System should be standardized for Taqman and SYBR Green Chemistry with pre-validated and functionally tested Taqman Gene Expression Assays as well as Taqman SNP Genotyping Assays. They should be readily available from the same vendor..

**43. Name of Instrument- GEL/Chemi DOCUMENTATION SYSTEM**

(1)

**Specification:-**

1. True 16 bit high definition High Resolution CCD camera of 1.4 Mega Pixels with USB or Fire Wire
2. Motorized Computer Controlled Filter Wheel for Multiplex Imaging with UV Transilluminator and fluorescence and Chemiluminescence filters
3. Dark room Cabinet should be sturdy and preferably pull-out tray for easy placing of Gels
4. Dual Epi-White Lights and option for UV Epi-illumination
5. Auto Focus Mode for Motorized Zoom Lens
6. Optional Blue Light Illumination Converter Screen
7. One touch Software for acquisition, enhancement, editing, annotation, archiving and Software for analysis including features like 1-D multi lane densitometry, MW, RF analysis, Colony counting
8. Software for RFLP, Fingerprinting analysis with Dendrogram generation and database capability for comparing band across multiple gels. Perform phylogenetic analysis of the banding pattern data from RFLP, RAPD etc.
9. Computer Dual core Latest with atleast 1GB RAM, 160GB HDD, CD/DVD Writer, 17" TFT Monitor with good Quality Laser Printer

**44. Name of Instrument- MILLIQUE WATER SYSTEM**

(1)

**Specification:-** Q-Guard Cartridge, Quantum Cartridge, Milipackfinal filter, TOC meter, UV lamp, Pyroguard5000F Cartridge, Receptivity meter

**Product water Quality:-**

Flow rate:-	1.0 liter/min
Resistivity	18.2 MΩ cm @ 25°C
TOC Level (typical values)	1-5ppb
Pyrogen level	<0.001 Eµ/mL
Bacteria	<1cfu/mL
Particulates>0.22µm	<1P/mL

All important consumable including 40 liters reservoir tank prices must be included in single quote.

**45. Name of Instrument-****LYPHOLIZER**

(1)

**Specification:-**

1. Ice Capacity=1-3Kg
2. Condenser Temp.= -50 to -55°C
3. Vacuum pump= 165 ltrs/Min
4. D/Chamber 12ports M/Chamber 4024 ports
5. complete with Flask adapter, Complete flask, pump exhaust filter, pump inlet filter

.....  
**46. Name of Instrument- DOUBLE BEAM DOUBLE WAVE LENGTH UV-VIS SPECTROPHOTOMETER (2)**

**Specification:-**

1. Photometry system: Double beam
2. Wave length: Preferably double wave length, measuring range 190-1100 nm
3. Wave length accuracy :  $\pm 0.5$  nm
4. Spectral band width: 1.6 nm
5. Wave length reproducibility: 0.1 nm
6. Wave length scanning speed: 450 nm/ min. to 3000 nm/min.
7. Provision of common features: like Photometry reproducibility, auto zero function, base line correction etc. should be there.
8. With printing system
9. Accessory: Ultra-micro cuvetts, variable size.
10. Stray light at 220 nm(NaI), at 340 nm(NaNo<sub>2</sub>), at 370 nm(NaNo<sub>2</sub>), at 200 nm(KCl)
11. Baseline flatness Slit 1 nm

.....  
**47. Name of Instrument- SPEED VAC (1)**

**Specification:-**

1. Laboratory Scale table freeze dryer including vacuum pump suitable for Vials, Flasks, Ampules and Bulk Drying, Centrifugal vacuum concentrator, with built-in diaphragm pump with 48x1.5/2ml fixed angle rotor
2. Temp. Cold Trap= -60°C, Shelf Temp. =50°C, Having CFC free refrigeration
3. Vacuum Pump= 200ltrs/min
4. One touch Auto Control Microprocessor Based system with digital display of vacuum, Temp., Time
5. Backfill, Auto-purging and alarm system
6. Defrosting System=Hot gas system
7. Complete SS chamber With all utilities

.....  
**48. Name of Instrument- Liquid Scintillation Counter (1)**

**Specification:-** Bench Top Automatic Liquid Scintillation Counter For 336 value system with printer, Detector-Photon Counting Photomultiplier tube, Dynamic range-200CPS-50000000CPS

Counting time-0.1 seconds to 99999minutes

H number plus external quench monitor & Automatic Quench Compensation., Single and dual table DPM

Multichannel Analyser(32,768 channels) - Multitasking Capabilities.

Automatic calibration & verification, Permanent memory, Electrostatic Controller, High Count rate terminator,

Positive Sample, 20 User Programmes., Auto Isoset., Interrupt Capabilities.,

Isotop library-3H, 14C, 32P, 35S, 125i Fixed Background Subtraction

First Vial Background subtraction. Final result normalization., Single Reference label % reference calculation.

Repeat & replicate Averaging with %C V., Half Life Correction, IC number.

.....  
**49 Name of Instrument- ELISA READER with Washer (1)**

**Technical specification:-**

Spectral range:- 400-750nm, 3 filter included free of charge;-405nm, 450nm, 620nm, The filter wheel can hold a maximum of eight filters., Linearity:- 0-2.5 Abs at 405nm,  $\pm 2\%$  or 0.007Abs, typical value:  $\pm 1.5\%$

Read-out range:- 0-3.5Abs, Accuracy:-  $\pm 2\%$  or 0.007 Abs, typical value:  $\pm 1\%$  (0-2.0Abs)

Precision:- CV <0.5% or 0.007Abs, typical value: CV<0.25 (0-2.0Abs)

Resolution:- 0.001Abs, Measurement time:- 5 s/96-well plate, Shaking:- Linear shaking, 3 speeds

Detector:- Semiconductor photodiode, Interface connections:- Serial RS-232 interface, Parallel interface

**Washer**

Plate type:- 96-well plate, Wash/waste bottle capacity:- 2 l+2 l

Additional Wash bottle capacity:- 2 l, Priming consumption:- 15-20 ml

Residual aspiration volume:- < 5ul, Dispensing precision :- 5%

Wash heads :- 8- and 12-way, Wash program cards :- 1-4 washes

Programmable card:- Volume 0-750ul, Washes 1-15, Soak time 0-10 min, Pause 0-60s

Wash time:- 120s, 3x350ul with 12-way wash head, 165s, 3x350ul with 8-way wash head

.....  
**50 Name of Instrument- CO2 Incubator (1)**

**Specification:-** Internal Volume=170 Ltrs, with (IR) CO2 SENSOR

Temperature Management: Range : +5°C above ambient to 50°C with six sided heating and with control accuracy of :  $\pm 0.1^\circ\text{C}$ ,

CO2 control Range : 0.2 — 20% or better,

Humidity Control : 95% rH or more

System should be supplied with built-in automatic decontamination routine at 120°C

Alarm for indicating low water level, Large viewing window, with display system

Interior should be made of SS with rounding corner for easy cleaning,

Data storage facility for CO2 and Temperature

SHELVES:Capacity : 2500 cm/shelf, Qty provided : 3, Adjustability: 8 steps.

HEPA FILTER on CO2 inlet. Gas cylinder with regulator with fittings.

.....  
**51 Name of Instrument- LOW DEEP FREEZER (-86°C) (2)**

**Specifications:-** HORIZONTAL (CHEST) TYPE, CAPACITY : 17.3 cu.ft/ 490 LITRE  
TEMP. RANGE : . -50 D.C. TO -86 D.C., REFRIGERATION: CASCADE SYSTEM 2X I HP (2545)  
REFRIGERANT: NON-CFC & NON-HCFC, DISPLAY: DIGITAL DISPLAY  
INSULATION : NON-CFC . FOAMED-IN- PLACE POLYURETHANE: 5 (12.7 cm)  
AUTOMATIC VOLTAGE COMPENSATOR

.....  
**52 Name of Instrument- High Pressure Homogenizer (1)**

**Specification:-** The equipment should be used for Cell lysis (mammalian/plant/e-coli/yeast/bacteria), Pro and Eukaryotic cells, Laboratory Model with all accessories,

.....  
**53 Name of Instrument- Spray Dryer (1)**

**Specification:-** 250mg to 1Kg/ hrs capacity, Disc atomizer pore size 3-4mm with product collect hopper, Laboratory Model / with all supporting accessories, Made of SS,

.....  
**54 Name of Instrument- Rising Film Evaporator (1)**

**Specification:-** Pumping and recycling facility, Capacity 1 to 5Kg /hrs capacity  
Having the facility of circulation evaporation, Particle size 5 to 60% with all the accessories for heating, Made of SS , Laboratory Model with all accessories

.....  
**55 Name of Instrument- Liquid Nitrogen plant (1)**

**Specification:-** 15 Liters for 24hrs and an internal storage capacity of 30ltrs  
With helium compressor with adequate capacity for cooling helium compressor,  
Liquid Nitrogen generator, Air Compressor, water cooler of Nitrogen gas generator,, With containers of different sizes

.....  
.....