

**TENDER FORM  
OF  
SCIENTIFIC INSTRUMENTS / EQUIPMENT & CONSUMABLE ITEMS  
FOR  
ANAND AGRICULTURAL UNIVERSITY, ANAND**

Last date for online commercial bid submission  
**21-09-2015 before 6:00 pm**

Period for Physical Submission of Technical Bid / Tender  
**Between 22-09-2015 and 29-09-2015 before 6:00 pm**

Date of Tender Opening (Technical Bid): **30-09-2015**



**DEPARTMENT OF AGRICULTURAL BIOTECHNOLOGY  
ANAND AGRICULTURAL UNIVERSITY  
ANAND – 388 110 (GUJARAT)  
PHONE: 02692 261134  
E-MAIL: biotech.aau@gmail.com**

➤ **Name of vendor / supplier / firm:**

➤ **Complete Postal address :**

➤ **Telephone Number :**

➤ **Fax Number :**

➤ **E-mail address :**

➤ **Details of the Tender Fee :**

- DD number :
- Amount :
- Date :

➤ **Details of EMD:**

- DD number:
- Amount:
- Date:

➤ **Sales Tax No.:**

➤ **Registration No.:**

➤ **Any other details:**

**We agree to abide by the terms and conditions of supply mentioned in this tender document.**

**Signature of Tenderer  
(with stamp, Name & Designation)**

On behalf of The Director of Research, Anand Agricultural University, Anand and as per the recommendations of the committee as constituted by him vide his vernacular order no. AAU/DR/T.1/E-Tender/3532-33/15, Dt. 30.6.2015, The Unit Officer, Department of Agricultural Biotechnology, AAU, Anand invite tender from Manufacturer or Authorized Distributor/Dealer through e-procurement portal for the purchase of following scientific instruments, equipment, laboratory fixtures & consumable items with given specifications, terms and conditions.

Sr. No.	Name of the Instrument	Specifications	EMD (in Rs. Lakh)
<b>PART-I: SCIENTIFIC INSTRUMENTS &amp; EQUIPMENTS</b>			
<b>A. Department of Agricultural Biotechnology</b>			
1.	<b>Phosphoimager</b> (Fluorescence & Chemiluminescence Imager)	<p><b>1. Advanced and fully automated multipurpose Chemiluminescence &amp; Fluorescence imaging system with a minimum image field size of at least 10 cm x 12 cm and is able to document and analyze the information for the following research applications:</b></p> <p>a. Chemiluminescence, DNA Western blot, Multiplex Fluorescence Western blot, Fluorescence imaging, Colorimetry, Densitometry, RNA i-analysis, Zymography, In Gel Western, Protein Gel imaging and 2-D gels.</p> <p>b. Image field size should be at least 10</p> <p><b>2. Camera specifications:</b></p> <p>a. Scientific grade true thermoelectrically cooled CCD camera with operating temperature of 15-35 degree</p> <p>b. System should offer superior resolution of 125 um or better</p> <p>c. System should have superior Laser based Optical Detection system with a laser life time of at least 20,000 working hours and should eliminate the need for post image capture data correction</p> <p>d. Dynamic range must be &gt;6 orders/logs of magnitude for efficient detection and quantification of both faint and intense band on the same blot or gel.</p> <p>e. Autofocus ability or motorized optics for setting the aperture, zoom and focus of optical system for eliminating the harmful UV Excitation light - safer alternative for downstream DNA applications</p> <p>f. Minimum of 3 position filter or emission detection channels/wheel should be available for capturing images of various dyes effectively. The filter/channel wheel should be automatic without the requirement of manually changing or moving the filter/channels.</p> <p><b>3. Acquisition Times :</b></p> <p>a. Chemiluminescence channels - 30 to 60 minutes</p> <p>b. Fluorescence channels - 30 sec. to 10 minutes</p> <p>c. System should use higher sensitive and superior lasers having facility to accommodate 600 nm (diffuse light at 520 nm), 700 nm and 800 nm channels using multiple lasers detection system.</p> <p>d. System should able to view SYBR family of dyes and other fluorescent gel dyes.</p> <p>e. White light converter plate/screen for illuminating samples such as Coomassie blue, Amido black, and Ponceau stained gels &amp; Silver Stained gels.</p> <p>f. Operating voltage is 230 VAC</p> <p><b>4. Image Acquisition &amp; Analysis Software:</b></p> <p>a. User friendly software for image acquisition capabilities.</p> <p>b. Automated templates for repeated experiments (OR) One Touch image acquisition every time without a need for multiple exposures.</p>	1.35

		<ul style="list-style-type: none"> <li>c. Complete flexibility with automatic and manual detection of lanes and bands, using several algorithms.</li> <li>d. Analysis function should include 1D Quantitative analysis to find and labels lanes &amp; bands.</li> <li>e. Molecular Weight calculation, Rf value calibration, Band intensities and Area Density calculation.</li> <li>f. Digital video playback of acquired images.</li> <li>g. Dot Blot Analysis.</li> <li>h. Western Blot densitometry.</li> <li>i. Annotation tool for visualization and publication.</li> <li>j. Easy copy/paste functionality, crop, zoom and colors.</li> <li>k. Software should produce customizable reports with data organized as desired, including, Lane and band identification, molecular weight or base pair evaluation.</li> <li>l. Software should have life time validity with multi user license or no license requirement for multiple installations.</li> <li>m. The system should be supplied with suitable laptop / branded computer work station with intel i3 Processor, 2.0GHz Processor, 1TB Hard Disk, 8 GB DDR RAM for analysis and storage of images.</li> </ul> <p><b>5. Start Up Reagents:</b> System should be offered with DNA detection / quantification dyes like Syto 60, Ethidium bromide, SYBR family with required buffers / washing solution for doing 100 experiments along with following chemiluminescence reagents –</p> <ul style="list-style-type: none"> <li>a. High sensitive Chemiluminescence substrate – 200 ml</li> <li>b. Striping buffers</li> <li>c. Washing buffers</li> <li>d. IR Dye 800 CW, IR Dye 680RD and IR Dye 680 LT antibodies for 200 experiments.</li> </ul> <p><b>6. Warranty:</b> <u>The rate quoted should be inclusive of 3 years extended warranty in addition to standard warranty.</u></p>	
2.	<b>Bioreactor</b> (Mist Bioreactor)	<p><b>Specialized mist bioreactor / misting environmental chamber</b></p> <ul style="list-style-type: none"> <li>1. The equipment should be capable of creating mist environment using culture media for callus growth and tissue culture applications with controlled environment for pH and temperature.</li> <li>2. The system should have one Complete Jacketed Fermenter system and one separate jacketed vessel (Slave/Secondary Vessel)</li> <li>3. The system should be able to use for growth/fermentation of virtually any cell type (aerobic and anaerobic microbes, yeast, plant and mammalian cells).</li> <li>4. General system control: 4 stage PID Cascade control function with any one and any combination (simultaneous) of four parameters (stirrer speed, aeration rate, gas mix and substrate feed).</li> <li>5. <b>Jacketed Fermenter system -</b> <ul style="list-style-type: none"> <li><b>a. Function:</b> <ul style="list-style-type: none"> <li>1. The vessel attached to the main unit should be capable for accommodating medium.</li> <li>2. The system should have provision for mixing activated charcoal if there is a need to incorporate the same in medium.</li> <li>3. The system should be capable for controlling parameters such as pH, dissolved oxygen (DO), temperature, etc.</li> <li>4. There should be a provision for transferring the medium to the slave/ secondary fermenter vessel so that the mist could be created.</li> </ul> </li> </ul> </li> </ul>	<b>0.90</b>

		<p><b>b. System requirement:</b></p> <ol style="list-style-type: none"><li>1. The system vessel should be autoclavable and made up of borosilicate glass with dished bottom.</li><li>2. The system vessel should be water jacketed with minimum 10 liters working volume.</li></ol> <p><b>6. Slave/Secondary Vessel Specification –</b></p> <p><b>a. Function:</b></p> <p>The slave vessel should be used for mist generation for callus and hairy roots and of different cultures.</p> <p><b>b. System requirement:</b></p> <ol style="list-style-type: none"><li>1. It should have a mist generator and other desired pumps for variable and fixed speed operation.</li><li>2. The system should have suction and addition pipes for the creation of the mist.</li><li>3. The system vessel should be autoclavable and made up of borosilicate glass with dished bottom.</li><li>4. The system should have built in pH, dissolved oxygen (DO), foam controllers etc. for proper functioning of the system.</li><li>5. The slave vessel should be equipped with microprocessor based specially developed Illumination system with programmable day and night cycles.</li></ol> <p><b>7. Controller Unit Specification –</b></p> <ol style="list-style-type: none"><li>1. The controller should be capable of controlling and viewing up to three independent fermenters from a single unit with 8.4-inch / 21.3 cm color touchscreen.</li><li>2. It should have built-in “cascade” feature capable for automatically maintaining DO set points.</li><li>3. The system should be capable for controlling DO with agitation.</li><li>4. The system should monitor and generate necessary alarm for minimum or maximum changes occurring for pH, dissolved oxygen (DO), foam controllers etc. in real time mode as well as controlling the change automatically.</li><li>5. It should have built-in USB Port for future software upgrades.</li></ol> <p><b>8. Illumination System Specification –</b></p> <p><b>a. Function:</b></p> <p>The system should be capable for providing illumination to the cultures as per the operational requirement.</p> <p><b>b. System requirement:</b></p> <ol style="list-style-type: none"><li>1. The illumination system should be jacketed foldable with 4 SSL (solid state lamps) and the spectral distribution of light in the wavelength region, PAR, (400- 700 lighting panels, with electronic control system and digital real time clock.</li><li>2. Day length Programmable with resolution of 1 minute.</li><li>3. Simulation of day &amp; night cycles (length) with 8 different zone set points to program the desired day and night lengths.</li><li>4. Intensity control from 1 to 100 % in the steps of 1% increase.</li></ol> <p><b>9. Other Illumination Chamber Specification –</b></p> <table><tr><th>Sr. No.</th><th>Features</th><th>Specifications</th></tr><tr><td>1.</td><td>Maximum driving capacity</td><td>140 watt of power or 24 light bank of 6watt</td></tr><tr><td>2.</td><td>Programmable zones</td><td>8</td></tr><tr><td>3.</td><td>Intensity control</td><td>0 to 100% PWM or Analog (optional)</td></tr><tr><td>4.</td><td>Time base</td><td>Built in Real time clock</td></tr><tr><td>5.</td><td>Time range</td><td>99:59 hours : minutes</td></tr><tr><td>6.</td><td>Light driving</td><td>Constant current source</td></tr></table>	Sr. No.	Features	Specifications	1.	Maximum driving capacity	140 watt of power or 24 light bank of 6watt	2.	Programmable zones	8	3.	Intensity control	0 to 100% PWM or Analog (optional)	4.	Time base	Built in Real time clock	5.	Time range	99:59 hours : minutes	6.	Light driving	Constant current source	
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3.	<b>Spectrophotometer with Accessories</b>	<b>Specifications for Spectrophotometer -</b> 1. Wavelength selection: Monochromator based 2. Light source: Xenon flash lamp 3. Wavelength range (nm): 200-1000 4. Sample requirement (ul): 1.0 or less 5. Number of samples analyzed at a time: 8 or more 6. Cuvette: The system should be capable for operating with cuvette. 7. Plate: The system should also have additional option of analyzing samples in plates. 8. User interface: a. The system should preferentially have stand-alone system so as to operate the system without the need of computer. b. The system should have data storing capacity with optional user interface capacity to link the system with laptop. The software require for the same should also be included and provided with minimum three years free of cost software up-gradation. 9. Other Accessories / Conditions: a. Suitable UPS with minimum 45 minutes backup time for continuous operation should be provided with no extra cost. b. A laptop with pre-installed licensed copy operating system should also be quoted extra. c. Additional three years warranty has to be provided with the instrument other than standard warranty with no extra cost. d. Four set of cuvettes and minimum 500 plates compatible with the instrument should be provided with the instrument. e. Consumables, if any required for working of the instrument for one year should be supplied with the instrument as and when required at no extra cost	<b>0.27</b>																								
4.	<b>Autoclave</b>	<b>Horizontal High pressure Steam Sterilizer with auto control panel:</b> <table><tr><td>1.</td><td>Operating Pressure (Steam based)</td><td>Jacket - 1.2 Kg\cm<sup>2</sup> Chamber - 1.2 Kg\cm<sup>2</sup></td></tr><tr><td>2.</td><td>Sterilizing Temperature</td><td>121°C</td></tr><tr><td>3.</td><td>Chamber Internal Size</td><td>900 x 900 x 900 mm</td></tr><tr><td>4.</td><td>Design / Construction</td><td>The complete equipment should be manufactured in Accordance with IS 3829 part I</td></tr><tr><td>5.</td><td>Design Pressure</td><td>The sterilizer should be designed to operate at 1.76 kg/cm<sup>2</sup> of steam</td></tr></table>	1.	Operating Pressure (Steam based)	Jacket - 1.2 Kg\cm <sup>2</sup> Chamber - 1.2 Kg\cm <sup>2</sup>	2.	Sterilizing Temperature	121°C	3.	Chamber Internal Size	900 x 900 x 900 mm	4.	Design / Construction	The complete equipment should be manufactured in Accordance with IS 3829 part I	5.	Design Pressure	The sterilizer should be designed to operate at 1.76 kg/cm <sup>2</sup> of steam	<b>0.30</b>									
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6.	Material Thickness		<b>Chamber:</b> S.S. 6 mm <b>Jacket:</b> M.S. 10 mm <b>Back Plate:</b> S.S. 6 mm <b>Door:</b> S.S. 12 mm	
7.	Insulation		The jacket should be properly insulated and covered with S. S. sheets	
8.	Type of doors		Self-aligning, pressure locking type, safety doors with radial locking arms	
9.	Mounting		1. Sterilizer should be mounted on sturdy M. S. pipe stand with levelling flanges. 2. All service pipe lines should remain in unsterile side. 3. Door gasket should be fitted on door. The gasket will be solid section of silicone rubber. 4. S. S. valves should be provided to carry out necessary functions of the sterilizer. 5. All pipes going in and out of chamber should be of S. S.	
10.	Safety Features		1. <b>Safety Valves:</b> Two spring loaded safety valves for jacket has to be provided. 2. <b>Plug Screen:</b> Removable plug screen for chamber drain line should be provided. 3. <b>Vacuum Breaker:</b> Automatic vacuum breaker for jacket should be provided 4. <b>Baffle:</b> S. S. baffle for even steam distribution should be provided in chamber. 5. <b>Safety locking for Door:</b> Pressure lock safety device should be provided and mounted on door. 6. Safety locking arrangement should be provided for loading and carrying with transfer trolley.	
11.	Material of construction		Sterilizer chamber: S.S. 316 Door: S.S. 316. Jacket: S.S. 304 with S.S. 304 radial arms Loading carriage: S.S. 304 / 316 Transfer Trolley: M.S. Door Gasket: Silicon Insulation: Fibre Glass resin bonded wool. Insulation Cover: S.S. Sheets	
12.	Instrumentation		<b>Auto control panel:</b> PLC based auto programming of cycles <b>Temperature Indicator:</b> Dual type temperature meter should be provided <b>Pressure / Vacuum Gauges:</b> Pressure cum vacuum type gauge should be provided for chamber. One pressure gauge should be provided for	

			jacket.		
		13.	Hydraulic test	<b>Jacket:</b> Jacket should be hydraulically tested at 2.4 Kg/Cm <sup>2</sup> <b>Chamber:</b> Chamber should be hydraulically tested at 1.8 Kg/Cm <sup>2</sup>	
		14.	Mode of Heating	Sterilizer should be provided with electric steam generator outside with electric load 24 kws	
		15.	Sterilizer	Sterilizer should be capable of accommodating at least twenty (20) trays with maximum size of 410 x 410 x 140 mm	
		15.	Other Accessories/ Conditions:	1. Additional three years warranty has to be provided with the instrument other than standard warranty with no extra cost. 2. Consumables, if any required for working of the instrument for one year should be supplied with the instrument and as and when required at no extra cost.	
B. Department of Plant Pathology					
5.	Ultra Low Temperature - 86 °C Deep Freezer	The quoted equipment i.e. Ultra Low Temperature - 86 °C Deep Freezer ought to meet following technical specifications - <ol style="list-style-type: none"> <li>1. Upright ultra-low freezer of 570 Liters capacity.</li> <li>2. System should have Programmable operating temperature from -50°C up to -86°C (degree Celsius) with 1°C increment.</li> <li>3. Construction should be of Polyurethane insulation combined with a highly efficient cooling system.</li> <li>4. System should have improved temperature uniformity with an automatic vent port located within the user interface panel at eye level &amp; with easily accessibility.</li> <li>5. System should have reduced energy consumption (Power Consumption =11.7 kWh/day). It should also have a high efficiency compressor &amp; condenser.</li> <li>6. Inner door should have silicone seal for improved temperature insulation with state of art magnetic closures. Outer door should have safe silicone triple point seal for improved insulation with an ergonomically designed handle.</li> <li>7. Freezer should have five compartment with four adjustable height stainless steel shelves and five inner doors with magnetic closures &amp; silicone seal for thermal protection.</li> <li>8. System should be able to pull down the temperature from ambient temperature to -85 °C in 5.1 hrs.</li> <li>9. Freezer should have the sample (2" vials) capacity of 40,000 or more.</li> <li>10. Should have security keyed locks on the outer door handles. Freezer must have battery back-up for the display in case power outage and 4 PIN securities lock.</li> <li>11. Freezer must have RS 485 interface data logging port</li> <li>12. It must also have on board SMART PLUS diagnostic software.</li> <li>13. Freezer must have ISO 9001 standard quality test requirements and IEC 61010 Electrical safety CE &amp; UL certified.</li> <li>14. Freezer should have electric supply of 230v/50hz, 10 amps. Single phase Freezer should be supplied with 3KVA voltage</li> </ol>			0.24



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<b>6.</b>	<b>Trinocular Stereozoom Microscope with Photomicrographic attachment</b>	<p>Trinocular Stereozoom Microscope With Photomicrographic attachment ought to meet following technical specifications –</p> <table border="1"> <tr> <td>1.</td><td>Optical light path</td><td>Fully Apochromatic Light Path with Common Main Objective technique /telescope system Electronic Click Stop Selectable Zoom Speed</td></tr> <tr> <td>2.</td><td>Zoom Range /Ratio</td><td>Motorized Zoom optics of 0.75x to 15x with Zoom Ratio of 1:20</td></tr> <tr> <td>3.</td><td>Optical Resolution</td><td>429 Line pair/mm with 1X apochromate objective</td></tr> <tr> <td>4.</td><td>Viewing Angle</td><td>35 degree</td></tr> <tr> <td>5.</td><td>Observation Tube</td><td>Switchable 100% for Video or Photo and 100% for Observation</td></tr> <tr> <td>6.</td><td>Depth of field</td><td>70mm at 10x/23 Wide field eyepieces</td></tr> <tr> <td>7.</td><td>Total Magnification</td><td>7.5x - 150x with 10x Eyepieces and Up to 375X with 25x Eyepiece</td></tr> <tr> <td>8.</td><td>Upgradation Possibilities</td><td>Future upgradation for Fluorescence should be possible</td></tr> <tr> <td>9.</td><td>Free Working Distance</td><td>60 mm at 1x Apochromatic Objective</td></tr> <tr> <td>10.</td><td>Inter pupillary Distance</td><td>55mm - 75mm</td></tr> <tr> <td>11.</td><td>Eye pieces</td><td>10x 23 mm FOV Focusable and Adjustable along with eyecups</td></tr> <tr> <td>12.</td><td>Illumination</td><td>Reflected LED Ring Light Transmitted LED Light illumination with facility for Bright field and Dark field and variable oblique illumination. Cold Light Source upto 600 lm light flux. Minimum 50000 operating hours Control of intensity and 6 memory cells by turn push knob and LCD filter slider for 2 mounted filters Light Filter and Daylight Filter</td></tr> <tr> <td>13.</td><td>Color temperature</td><td>6200°K (daylight)</td></tr> <tr> <td>14.</td><td>Brightness control</td><td>Brightness control with special 10-step increments</td></tr> <tr> <td>15.</td><td>Stage</td><td>Large Stand Base of size WxDxH 449x346x30mm with Gliding Stage 110 x 110 d=120mm with X Y ball tracks and glass plate usable with transillumination</td></tr> <tr> <td>16.</td><td>Digital Camera</td><td>5 Megapixel CCD Colour camera</td></tr> <tr> <td>17.</td><td>Resolution</td><td>5 Mega Pixel (2452 X 2056)</td></tr> <tr> <td>18.</td><td>Pixel Size</td><td>Pixel size 3.45 µm× 3.45 µm</td></tr> <tr> <td>19.</td><td>Sensor size and type</td><td>2/3" CCD with firewire interface</td></tr> <tr> <td>20.</td><td>Interface</td><td>Firewire interface</td></tr> <tr> <td>21.</td><td>Speed in Live image</td><td>9fps with full frame of 2452 x 2056</td></tr> <tr> <td>22.</td><td>Camera adaptor</td><td>C mount in line with CCD size preferably 0.5x to 0.63X</td></tr> <tr> <td>23.</td><td>Software:</td><td>It should be user friendly and give or carryout analysis on</td></tr> </table>	1.	Optical light path	Fully Apochromatic Light Path with Common Main Objective technique /telescope system Electronic Click Stop Selectable Zoom Speed	2.	Zoom Range /Ratio	Motorized Zoom optics of 0.75x to 15x with Zoom Ratio of 1:20	3.	Optical Resolution	429 Line pair/mm with 1X apochromate objective	4.	Viewing Angle	35 degree	5.	Observation Tube	Switchable 100% for Video or Photo and 100% for Observation	6.	Depth of field	70mm at 10x/23 Wide field eyepieces	7.	Total Magnification	7.5x - 150x with 10x Eyepieces and Up to 375X with 25x Eyepiece	8.	Upgradation Possibilities	Future upgradation for Fluorescence should be possible	9.	Free Working Distance	60 mm at 1x Apochromatic Objective	10.	Inter pupillary Distance	55mm - 75mm	11.	Eye pieces	10x 23 mm FOV Focusable and Adjustable along with eyecups	12.	Illumination	Reflected LED Ring Light Transmitted LED Light illumination with facility for Bright field and Dark field and variable oblique illumination. Cold Light Source upto 600 lm light flux. Minimum 50000 operating hours Control of intensity and 6 memory cells by turn push knob and LCD filter slider for 2 mounted filters Light Filter and Daylight Filter	13.	Color temperature	6200°K (daylight)	14.	Brightness control	Brightness control with special 10-step increments	15.	Stage	Large Stand Base of size WxDxH 449x346x30mm with Gliding Stage 110 x 110 d=120mm with X Y ball tracks and glass plate usable with transillumination	16.	Digital Camera	5 Megapixel CCD Colour camera	17.	Resolution	5 Mega Pixel (2452 X 2056)	18.	Pixel Size	Pixel size 3.45 µm× 3.45 µm	19.	Sensor size and type	2/3" CCD with firewire interface	20.	Interface	Firewire interface	21.	Speed in Live image	9fps with full frame of 2452 x 2056	22.	Camera adaptor	C mount in line with CCD size preferably 0.5x to 0.63X	23.	Software:	It should be user friendly and give or carryout analysis on	<b>0.39</b>
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19.	Sensor size and type	2/3" CCD with firewire interface																																																																						
20.	Interface	Firewire interface																																																																						
21.	Speed in Live image	9fps with full frame of 2452 x 2056																																																																						
22.	Camera adaptor	C mount in line with CCD size preferably 0.5x to 0.63X																																																																						
23.	Software:	It should be user friendly and give or carryout analysis on																																																																						

		<p>following Image parameters for report.  Support for acquisition of individual images  Movie Recorder: Enable films to be acquired very simply through duration setting  Interactive Measurement: Length, Contour based measurement data (area, box, perimeter, grey values)  Adjustable configuration of menu bars  Management, visualization and printing of data and images  µ Bar Scaling  Text Annotations  Post Processing (Contrast, Brightness, Gamma, Colours, Smoothing, Sharpening, Geometric Corrections)  Upto 3 containers for image comparison  Gallery View, Channel View  Histogram Measurement  Profile Measurement  Info view  Software should be capable enough to capture sequence of images that can be replayed as a movie. The interval between images can be defined from seconds to hours with the start time defined after a specified delay or at particular time. Multiple sequences can be defined each with their own time intervals. It should be capable enough to capture a wide field image combined with time series.</p>			
	24.	<table> <tr> <td>Processor with HD Screen</td> <td>i7 Processor, Windows7 Professional, 2GB Graphics Card, 1TB HDD, 23inch LED Screen</td> </tr> </table>	Processor with HD Screen	i7 Processor, Windows7 Professional, 2GB Graphics Card, 1TB HDD, 23inch LED Screen	
Processor with HD Screen	i7 Processor, Windows7 Professional, 2GB Graphics Card, 1TB HDD, 23inch LED Screen				
	<p><b>Note:</b> Microscope, Camera and Software should be from same manufacturer for better compatibility.</p>				
<p align="center"><b>D. Department of Biochemistry</b></p>					
7.	<p><b>Viscometer/ Advance Rheometer</b></p>	<p>Viscometer / Advance Rheometer with Accessories should have minimum specification as mentioned below.</p> <ol style="list-style-type: none"> <li>1. Viscosity Range: 0.0005 to 5.41 Million Pa.</li> <li>2. Spindle range: 0.003 to 27KPa.s</li> <li>3. Shear Rate: 0 to 2700 per sec, 5600 for Double Gap</li> <li>4. Shear Stress: 0 to 69000 Pa</li> <li>5. Torque: 0 to 100 mNm</li> <li>6. Torque Resolution: 0.15 micro Nm</li> <li>7. Speed: 0.01 to 1300 RPM</li> <li>8. Operation by Controlled Stress/Controlled Rate</li> <li>9. User friendly Touch screen with Graphical Display</li> <li>10. Enhanced position Optical Encoder</li> <li>11. Quick spindle attachment, Auto Spindle Recognition</li> <li>12. Enables Absolute Viscosity</li> <li>13. Yield Pont, Rheological properties.</li> </ol> <p>A. Heating Jacket for High Temp Measurement  B. Circulating Temperature Baths –</p> <p align="center"><b>Imported Make</b></p> <ol style="list-style-type: none"> <li>I. Temp. Low Range : -20 °C</li> <li>II. Temp. High Range : +170 °C</li> <li>III. Temp. Stability : +0.04 °C</li> <li>IV. Reservoir Capacity : 7.0 Ltrs</li> <li>V. Programmable with PC control using Rheocalc Software</li> <li>VI. Quick scroll to set temperature in standalone mode</li> <li>VII. 2-speed pump</li> <li>VIII. Maximum temperature up to 170° Deg C</li> </ol> <p align="center"><b>OR</b></p>	0.30		

		<p><b><u>Indian Make</u></b></p> <p>I. Temp.: 0 to 100 °C</p> <p>II. Circulating Bath</p> <p>III. Inbuilt cooling and heating</p> <p>C. Vane Spindle: All range should be supplied for different types of sample</p> <p>D. The system should be supplied with branded processor (PC) with preinstalled OS, 21" TFT Screen, 500 GB HDD, 4 GB RAM, Combo Drive with DVD Writer, Multimedia system with IR Mouse and Keyboard.</p>	
<b>E. Department of Veterinary Public Health</b>			
<b>8.</b>	<b>PCR Assembly</b>	<ol style="list-style-type: none"> <li>1. Silver block for 96 x 0.2 mL and 1 x 96-well PCR Plate (unskirted / semi-skirted and full skirted PCR plate)</li> <li>2. Should support minimum sample working volume of 5µL, without the need to use liquid wax or overlaying.</li> <li>3. Vapo Protect technology with Thermal Sample Protection</li> <li>4. Temperature control of block: 4 to 99°C</li> <li>5. Temperature control mode: Fast, standard and safe, with possibility to adjust ramp rates</li> <li>6. 12-Column gradient block with SteadySlope technology, selectable from 1 to 24° C across the entire temp. control range</li> <li>7. Gradient should be capable of running at the specified ramping rates.</li> <li>8. Block Homogeneity (20 – 72°C): <math>\leq \pm 0.3^{\circ}\text{C}</math>; (95°C): <math>\leq \pm 0.4^{\circ}\text{C}</math></li> <li>9. Control Accuracy: <math>\pm 0.2^{\circ}\text{C}</math></li> <li>10. Heating rate: 6°C/Sec; Cooling rate: 4.5°C/Sec</li> <li>11. Intuitive graphic programming</li> <li>12. Auto restart option in event of Power failures</li> <li>13. Display to indicate cyclers number in a network, with possibility to network at least 5 units controllable through single control panel</li> <li>14. PC controllable higher throughput upgradability up to 30 units should be possible in future</li> <li>15. Must have following interfaces: Centronics, USB, CAN in, CAN out</li> <li>16. Calibration according to NIST, DKD, UKAS standards</li> <li>17. Must have CE, ISO certification and comply to RoHS</li> </ol>	<b>0.24</b>
<b>9.</b>	<b>CO<sub>2</sub> Incubator</b>	<p><b>The system should have following technical specifications:</b></p> <ol style="list-style-type: none"> <li>1. 170 litre capacity on a minimal footprint.</li> <li>2. Shelves: 4 perforated shelves</li> <li>3. 72-hour continuous data logging of temperature, alarms, door openings and CO<sub>2</sub>, O<sub>2</sub> and RH if required, provides a detailed record of environmental conditions to quickly troubleshoot any unexpected results.</li> <li>4. Diagnostic interface to show system parameters and functions.</li> <li>5. 4 Split inner doors allowing outer door to open while maintaining atmosphere &amp; minimizes cross flow</li> <li>6. Capacity to quickly change both environmental &amp; alarm settings through intuitive controller</li> <li>7. Password protection for secure programmable settings and alarm set points.</li> <li>8. On-Screen troubleshooting &amp; help</li> <li>9. Six-sided direct heating system</li> <li>10. Fanless Design</li> <li>11. IR CO<sub>2</sub> sensor with automatic auto-zero programmable function to ensure accurate calibrated measurements.</li> <li>12. High temperature disinfection - 120° C 4 hours Cycle, CO<sub>2</sub> sensor should be present in the chamber while disinfection cycle is on.</li> </ol>	<b>0.30</b>

		13. Large volume humidification pan with dedicated, with independent heater. 14. Seamless chamber 15. HEPA filtration of gas supply inlets to ensure sterility. 16. 25 mm Access port. 17. RS232 communications port 18. Large 5.3" (13.5cm) LCD intuitive interface with 72 hour data logging 7 easy access to set point & alarms. 19. Range: 4 <sup>o</sup> C above Ambient to 50 <sup>o</sup> C 20. Uniformity: +/- 0.2 <sup>o</sup> C 21. Certification: CE	
<b>F. Animal Nutrition Research Department</b>			
<b>10.</b>	<b>Automatic Crude Fibre – NDF &amp; ADF Equipments with Accessories</b>	1. The Automatic Crude fibre, NDF and ADF system should be for simultaneous 12 sample determination that is based on the FIBREBAG method. 2. The instrument should offer the FULLY AUTOMATIC digestion unit capable of running all necessary dosing and filtration steps for crude fibre analysis as well as ADF and NDF determination. 3. The instrument should offer fully Automatic features of the fibre bag method. Make the sample extraction, a simplest job and overcome the tedious process of acid digestion, alkali digestion & moreover overcome the problems associated in sample draining in the extraction system using vacuum for draining of the samples by crucible method. 4. The unit should Consists of: a. Dosing and controlling unit b. Heating unit c. Digestion glass and sample carousel d. Compressor included 5. Also it should have provision of the following: a. Ceramic hotplate and pneumatic lift. b. Programmable addition of acid and alkali, addition of rinsing water, suction, optical & acoustical error message, cooling water control and extensive error control. c. Provision of drip tray, fibre bags 1000 Nos., glass spacers 12 nos., handle - one. 6. The supplier should offer free-of-cost 2000 Fibre bags, two spacers each for 12 samples, two diaphragms pumps – one each for acid and alkali, two years warranty followed by one year Annual maintenance contract.	<b>0.45</b>
<b>11.</b>	<b>Microwave Muffle Furnace with Accessories</b>	1) System should have single magnetron system with rotating diffuser for homogeneous microwave distribution in the cavity. 2) Magnetron should have protection facility from reflected microwave power 3) Installed power should be minimum 1200 watt 4) Power Output up to 1200 watt, controlled in 10 watt increments via microprocessor 5) Furnace Temperature range should be up to 1000 °C. Temperature measurement should be by precise thermocouple. The output of thermocouple should be used for regulating microwave power output to control the temperature. Furnace should achieve the fast temperature like 800°C in 30 minutes. 6) Temperature Uniformity should be +/- 1°C at 750°C 7) Microwave cavity should be entirely made of 18/8 stainless steel housing. Also outer body should be made up of stainless steel for long life of the system. 8) Door should be made of stainless steel with high temperature resistant insulating panel. Also door should open downward side so that it can be use as a working platform. 9) Muffle furnace should be microwave transparent ceramic	<b>0.48</b>

		<p>material.</p> <p>10) Muffle furnace volume should be about 5 litres. It should be able to accommodate 12 crucibles of 40 mm width.</p> <p>11) All hardware should have protection against acids/organic solvents with polymer coating both on side and outside surfaces</p> <p>12) Total of safety interlocks 4 micro-switches to prevent microwave emission with door open</p> <p>13) Temperature sensor to stop program runs in case of overheating.</p> <p>14) All-metal high-flow exhaust system (with selectable exhaust speed) should be there to cool the cavity and drive away the fumes. The exhaust design should be able to handle high organic samples (20-40 grams) sample quantities safely. The exhaust design should be such that it minimizes choking problems due to condensations of the gases generated during heating. Large quartz exhaust tube for fumes removal.</p> <p>15) Touch control 6.5" screen with 65000 colors. VGA resolution 640X480 for high resolution. One USB port for printer, 2 PS2 port for mouse and keyboard and 3RJ45 port for external devices. The controller should not be on the top of the system for safety purpose.</p> <p>16) The supplier should offer computer free-of-cost, 50 silica crucibles and also 2 extra set of muffle with the system in the main offer.</p> <p>17) Two years warranty should be offered.</p> <p>18) Standard Methods Compliance.</p> <ol style="list-style-type: none"> <li>ASTM (American Society of Testing and Materials) D5630-94</li> <li>(Standard Test Method for Ash Content in Thermoplastics) D1506-99</li> <li>(Standard Test Methods for Carbon Black-Ash Content) D482-95</li> <li>SEMI (Semiconductor Equipment and Materials International) SEMI F48-0600</li> <li>Test method for Determining Trace Metals in Polymer Materials</li> <li>U. S. Pharmacopia Methods USP 733 (Loss on Ignition)</li> <li>ISO 2171 (Cereals and milled cereal products-Determination of Total Ash)</li> <li>Power 220V/50-60Hz, 2.4Kw</li> </ol> <p>19) Vendor should have more than 5 years of experience in selling microwave products.</p>	
<b>12.</b>	<b>Fiber Extraction System</b>	<p>The system is required for detailed crude fiber analysis of feeds and fodder. The technical specifications of the system are:</p> <ol style="list-style-type: none"> <li>The equipment should offer crude analysis of 36 samples simultaneously based on fiber bag method only.</li> <li>The equipment should offer facilities for Acid and Alkali digestion made simpler using fiber bags made of nylon.</li> <li>The instrument should overcome the problem of sample associated in draining by extraction system using vacuum for draining of the samples by crucible method.</li> <li>The system should include: <ol style="list-style-type: none"> <li>Heating device for 36 samples simultaneously</li> <li>Digestion assembly with condensers, spacers and carousals for 36 samples.</li> <li>Incineration module with holding capacity of 12 ceramic crucibles for ashing.</li> <li>Ceramic crucibles-12</li> </ol> </li> </ol>	<b>0.27</b>

		e. Reusable Fiber bags made of nylon-2000 f. Muffle furnace in accordance with the size of incineration module. <b>5. Additional:</b> The supplier should offer following accessories at no additional cost: a. Two sets of digestion unit containing beakers, condensers and spacers (excluding heating device), 4 condensers, 12 spacers, 12 ceramic crucibles. b. <b>Two years warranty followed by one year annual maintenance contract.</b>	
<b>G. Livestock Production Management</b>			
<b>13.</b>	<b>Grinder and Mixture</b>	The Grinder and Mixture machine with capacity to produce 250 Kg material per hour should have following specifications - 1. Grass grinding machine with suction blower and pipe line 150mm MS diameter. Manually hand operated type inside feeding grass and 15 HP X 1440 RPM motor 2. Grinding machine heavy duty type with rotor, blade and sieve complete with small hoppers - 10 HP X 1440 RPM motor 3. Mixer machine cap 500 kg/batch Pavada or ribbon blade shaft with gear teeth socket to reduce speed with belt drive pulley - 10 HP X 1440 RPM motor. Manually hand operated gate to remove the materials 4. Hopper above mixer suitable for 500 kg /batch for grass and raw materials grinding 5. Chain gate manually hand operated chain pulley type fitted between hopper and mixture 6. Elevator – box type for grinding raw materials, pulley drive- 2 HP X 1440 RPM motor 7. Tr. Pcs. between grinding machine to elevator bottom parts. 8. Suction pipe-150mm MS diameter with bend etc complete grinding grass to hopper above batch mixer 9. Foundation bolts and nut for motor railing 10. Erection :plant erection at site as per our space 11. <b>Panel board</b> : individual switch at the machine 12. Cable for 15 HP and 10 HP motor :7 core - 2.5 sq mm cable 13. Cable for 2 Hp motor : 4 core - 1.5 sq mm 14. Cable rate should be given per meter only.	<b>0.18</b>
<b>H. Teaching Veterinary Clinical Complex</b>			
<b>14.</b>	<b>Fully Digital Veterinary Ultrasound Scanner with Color Doppler &amp; Pulse Wave Doppler</b>	The instrument quoted should have at least following technical specifications: 1. Should be state-of-the-art dedicated Veterinary Diagnostic Ultrasound Scanner with PC based with post processing, color flow mapping for velocity and power, pulse wave Doppler with high PRF, real time 4D Image Output with volume probe. 2. Should have multiple operating and display modes including real-time triplex mode B+CFM+PW, simplex mode PW, dual B, cine-loop playback. 3. Should have zoom on live and stored images, adjustable region of interest, picture in picture format, full screen format with 32 scale factors, Sector-linear technology Trapezoidal imaging, B-Mode and M-Mode. 4. Should have dedicated Veterinary applications in Obstetrical, Gynecological, abdominal, cardiac, small parts, artificial insemination, embryo transfer and superficial with electronic sector, electronic convex, electronic linear and electronic trapezoidal scanning methods. 5. Should have feature for post processing & raw data treatment	<b>1.05</b>

		<p>with adjustment of multiple image parameters.</p> <ol style="list-style-type: none"> <li>6. Should be sturdy console and trolley mounted with 3 continuously active probe ports, integrated Hard Disk Drive of minimum capacity 500GB, Integrated DVD-R/W Drive, USB ports, printer shelf with 2 sizes &amp; 4 positions adapted to both B/W printer or color printer and other printer types.</li> <li>7. Should have trolley fitted with 4 swivel wheels including 2 with brakes with wheel diameter of 10 cm.</li> <li>8. Should have 4 probe and gel holders removable for cleaning and washing, front handle, dismountable LCD arm with optional attachment of patient monitor on the arm, 2 Probe Cable Hangers, RJ 45 &amp; DVI connection.</li> <li>9. Should have data input and output features using DVD-R/W Drive, RJ 45, Video Out and minimum 2 USB ports.</li> <li>10. Should have minimum 19" TFT LCD Monitor with SVGA Format including adjustable Tilt/Swivel, Stereo Sound Bar, Digital Brightness / Contrast Adjustment, Landscape / Portrait Orientation, Dark Enhancement with display size of 1280 x 1024, Recording Area 1280 x 1024, Mechanical Index &amp; Thermal Index.</li> <li>11. Should be supplied with following wideband, user interchangeable probes with facility to change the probe without switching off the scanner: <ol style="list-style-type: none"> <li>a. Wideband linear rectal probe with central frequency of 7.5 MHz, B mode imaging frequencies of 5.0MHz, 6.0MHz, 7.5MHz, 9.0MHz &amp; 10.0MHz on obstetrics, gynecology, foetal sexing, ovarian diagnosis, follicle visualization and dynamics.</li> <li>b. Wideband linear probe with central frequency of 7.5MHz, B mode imaging frequencies of 5.0MHz, 6.0MHz, 7.5MHz, 10.0MHz &amp; 12.0MHz for applications on equine tendon diagnosis &amp; small animal superficial parts.</li> <li>c. Wideband convex probe with central frequency of 3.5 MHz, B mode imaging frequencies of 2.5MHz, 3.0MHz, 3.5MHz, 4.0MHz &amp; 5.0MHz for applications on abdominal on medium and big sized dogs, heart and abdominal on horses, camels &amp; muscle-skeletal on large animals, small Parts on small animals.</li> <li>d. Wideband phased array sector probe with central frequency of 3.1MHz, B mode imaging frequencies of 2.0MHz, 2.5MHz, 3.0MHz, 3.5MHz &amp; 4.0MHz for applications on general, abdominal, obstetrics &amp; gynecology, vascular examination on Animals.</li> </ol> </li> <li>12. Should have backlit and height adjustable alphanumeric operator keyboard with apt size for ease and convenience of use with Ergonomic Key Dispatch, intuitively Mode Grouped Ergo Zone keys.</li> <li>13. Should have keyboard with minimum 5 all-in-1 ergonomic knobs for mode, focus and zoom selection, track ball and L/R ergo-thumb click buttons, minimum 6 TGC rocker switches, TGC curve adapted to depth, 10 contextual keys for easy access to operation menus, grouped keys for storing clips and images, cine-loop and review &amp; sound indicator.</li> <li>14. Should have minimum 3 image storage viz. JPEG, BITMAP, DICOM to be included and clip storing formats of AVI &amp; DICOM with minimum 6500000 images in JPEG format, 500000 in Raw data format, 200000 in BMP format and 385000 in DICOM format.</li> <li>15. Should have clip storage of minimum 3500 clips in Raw &amp; JPEG data format with selectable clip length for storing, post processing on both stored and frozen clips and images, spatial</li> </ol>	
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		<p>filter, noise reject &amp; coloration of B image with automatic angle measurement in pulse wave.</p> <p>16. Should have individual user protocol for each application &amp; minimum 45 user annotation for each application.</p> <p>17. Should have Display Annotation including Institution/Hospital Name with Characters &amp; Date with selectable types, Time selectable, User name, Patient Name, Patient Identification.</p> <p>18. Should have power output readout mechanical index &amp; thermal index, real-time or frozen System Status, Probe Orientation Marker to coincide with a probe orientation marking on the probe, Stored Image thumbnails, Gray/Color Bar, Cine Gauge, Measurement Summary Window, Measurement Results Window, Probe Type.</p> <p>19. Should have application Name, Focal Zone Markers, TGC Curve, B Scale Marker, M Scale Markers with Depth/Time, PW scale markers with Time/frequency or Time/velocity, Image Review Menu with Load, store, delete, rename, Image thumbnails, System Messages Display, Trackball Functionality Status.</p> <p>20. Should have imaging parameters by mode following modes:</p> <ol style="list-style-type: none"> <li><u>B/M-Mode</u>: Imaging Frequency, Gain, Edge Enhance, Frame Averaging, Gamma, Image Depth, Dynamic Range, Trapezoidal angle, Power Output.</li> <li><u>Color Flow Mode</u>: Doppler Frequency, Color Gain, Power Output Frame Averaging, PRF, Reject filter.</li> <li><u>PW Mode</u>: Doppler Frequency, Doppler Gain, Wall Filter, Power Output, PRF, Gate size, Dynamic Range, Angle Correction.</li> </ol> <p>21. Should have dedicated true veterinarian software with multiple animal species inbuilt with provision of software upgrade without changing either the hardware or constitution of the ultrasound scanner via inbuilt evaluative hardware with firmware upgrade feature provided by the manufacturer.</p> <p>22. Should have software ultrasound imaging platform with digital beam former, 64 true emission channels and 128 reception channels, displayed imaging depth 3cm to 28cm, minimum depth of field 3 cm, maximum depth of field 8 cm.</p> <p>23. Should have transmission focus of 1–8 focus points selectable, focal zone position with 8 B mode steps, CFM adjusted in the middle of ROI, Continuous Dynamic Receive, Multi-Frequency/Wideband Technology, 256 Shades of Gray, Up to 90 dB Processing Dynamic Range, Adjustable Field of View (FOV), Image Reverse Right/Left.</p> <p>24. Should have following Measurements and Calculations:</p> <ol style="list-style-type: none"> <li>General Measurements/Calculations.</li> <li>B-Mode Distance 4.</li> <li>Circumference/Area Ellipse method 2 &amp; Trace method 1.</li> <li>M-Mode Tissue Depth (Distance) &amp; Time Interval (Rate).</li> <li>Doppler Mode Velocity (speed), Semiautomatic trace RI, S/D, PI, VMAX, VMIN, VAVG &amp; Manual trace RI, S/D, VMAX &amp; VMIN.</li> <li>Obstetrics including Abdominal Circumference (AC), Abdominal Area (AA), Amniotic Fluid Index (AFI), Antero-Posterior Trunk Diameter (APTD), Transverse Trunk Diameter (TTD), Antero-Posterior abdominal Diameter (APAD), Biparietal Diameter (BPD), Crown Rump Length (CRL), Estimated Fetal Weight (EFW), Femur Length (FL), Fetal Trunk Area (FTA), Foot Length (Ft), Gestational Sac (GS), Head Circumference (HC), Humerus Length (HL), Length of Vertebra (LV), Occipitofrontal Diameter (OFD),</li> </ol>	
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		<p>Transverse Abdominal, Diameter (TAD), Thorax Transverse Diameter (ThD), Kidney Length (Kidney), Radius (Radius), Foot Length (Ft), Nuclal Translucency (NT), Clavicle Length (clavicle), Fibula (Fibula), Tibia Length (Tibia), Ulna Length (Ulna), Ocular Diameter (Ocular D), Cisterna Magna (Cist.Magna), Cervical length (Cervix Len), Umbelical Vein Diameter (Umb VD).</p> <p>g. Gynecology &amp; measurements/Calculations, Abdomen and Small Parts.</p> <p>h. OB Worksheet with Patient Information, Measurement Information, AC, HC, OFD, BPD, FL, Calculation Information EFW Estimated Fetal Weight, EDD Estimated Delivery Date, CRL/GA, BPD/GA, GS/GA, BPD/FG AC/FG, FL/FG, GS/FG, TAD/FG, HC/FG, Cephalic Index, FL/HC, HC/AC, FL/AC, HC ( BPD &amp; OFD), FL/HC, FL/BPD.</p> <p>i. OB Graphs with Fetal Growth Curve Graphs, Normal growth curve, percentiles, and ultrasound age of the fetus, 1 measurement per graph and Fetal Growth Bar Graph.</p> <p>25. Should work on standard Electrical Power with Voltage 220V–240VAC, Frequency 50Hz/60Hz, Power 400 VA with Inbuilt Peripherals and should be pre-fitted with built-in Isolation Transformer.</p> <p>26. Should be backed by manufacturer certifications complying CE Marked to Council Directive, ISO 13485 / ISO 14001 / ISO 9001 / EMAS / UL. All manufacturer certifications to be produced at the time of delivery/installation.</p> <p>27. Installation should be done on site with complete user technical training and backed by onsite after sale and service support in Gujarat.</p>	
<b>I. Department of Physiology and Bio- chemistry</b>			
<b>15.</b>	<b>Gel Documentation System</b>	<p>Gel Documentation Specifications:</p> <p>A. Internal illumination with overhead internal white light source and optional epi-UV illumination.</p> <p>B. Compaq model with safe darkroom.</p> <p>C. Software for Real time image viewing for both focusing and acquisition.</p> <p>D. Full computer control of every aspect of image capture: Camera lens, darkroom, exposure, lighting and onscreen display of system status.</p> <p>E. Dual wavelength UV transilluminator with high/low intensity, for imaging fluorescent DNA and protein gels.</p> <p>F. The UV transilluminator should be a pull out tray, to make extraction of bands from gel easier. A fold down, 21x31cm white light table provides even white light transillumination. A built in 5 position filter wheel with easy access to 5 optional filters will be preferable. UV Transilluminator with at least: 302, 365nm, 21x26cm filter area.</p> <p>G. High resolution camera with at least:</p> <p>a. 14.4 MP camera with 12 bit A/D , Pixel size : 4.65 x 4.65 Micron</p> <p>b. Red Noise : 31 e- ms and resolution : 1360 x1024</p> <p>c. Motorized 8-48mm, F1.2 zoom lens with +2 diopter close-up lens</p> <p>d. Computer, Thermal printer, 1D and 2D analysis user friendly software with free upgradation.</p> <p>H. EBR filter and SyBR filter inclusive</p>	<b>0.24</b>

<b>J. Livestock Research Station</b>			
<b>16.</b>	<b>Pipeline Milking Machine</b>	<p>Technical specification of Pipeline Milking Machine are as under:</p> <ol style="list-style-type: none"> <li>1. Dedicated Pulsator-5 sets (operating in an alternating 2+2 pulsation configuration as per ISO5707.</li> <li>2. Milk Measurement Units – 5 sets (Milk Measurement Device for Manual/Visual Recording of Milk. The system should be Approved for Accurate Readings and able to take Analysis for accurate measuring of milk yield of each animal.)</li> <li>3. Milk Cluster - 5 sets (Stainless Steel Seat cups, Milk Claw with effective volume of 150 ml with Set of Liners and Milk tubes pulse tube. With combination of liner, shell and claw to suit the special need of Cows) cluster weight should be min 2500 gms)</li> <li>4. Supply Lines (All of stainless steel with variable diameter for transporting milk from cow unit to BMC as per requirement at the time of installation)</li> <li>5. Flow controlled Massage system to stimulate the cow for letdown of milk at the time of milking. (It should work on principle of let down that means initially massage, switchover to milking phase after milk flow 200 gm per min, then at low pulsation and vacuum. This should work automatically with flow of milk - 05 sets)</li> <li>6. GLASS Milk Receiver having 50 Liters capacity, inlets, sanitary discharge pump (0, 55 Kw, 1 / 3 -phase, 230/440V), over flow trap with connection and delivery line.</li> <li>7. Cleaning Unit – 1 set (Wash tank with 100 lit. volumetric capacity suitable to be mounted on floor / wall. This tank is used as a reservoir for cleaning solution /preparation of cleaning solution). Turbulence creation through spontaneous pulsation of cleaning solution</li> <li>8. Vacuum pump – (Capacity: 340 Ltrs./Min. at 50 KPa; Electric: 1.5 kW, 1 phase, 230 volts, 50 Hz) Qty. 2 Nos</li> <li>9. Regulator valve ( to maintain pre-set pressure in the system) Spring Loaded</li> </ol> <p><b>NOTE: Installation of the entire system at the site should be carried out by making use of the existing facility / material available with the office.</b></p>	<b>0.20</b>
<b>K. Department of Medicine</b>			
<b>17.</b>	<b>Multipurpose Rigid Diagnostic Set with Portable Endovision System</b>	<p><b>1. MULTIPURPOSE DIAGNOSTIC SET:-</b> Universal telescope for small animal practice, forward-oblique telescope 30°, diameter 2.7 mm, length 18 cm, auto-clavable, fiber optic light transmission incorporated. The set should be complete with examination &amp; protection sheath, operative sheath, biopsy &amp; grasping forceps, stone basket, polypectomy snare, ear curettes (small &amp; large), cleaning brush, myringotomy needle, otex brushes (narrow &amp; wide) &amp; trocars.</p> <p><b>2. ENDOVISION SYSTEM:-</b> Integrated, compact &amp; portable system combining light source, camera control unit, documentation, insufflations, irrigation &amp; monitor all in one. Should be compatible with all types of rigid and flexible scopes with option of direct image and video archiving (through USB port/SD card directly), image editing, zoom functions and generation of patient report. Monitor size should be minimum 15" with High intensity LED light source. Other features like DVI video output facility and integrated 3 speed, adjustable insufflations pump are mandatory. The unit should be complete with heat resistant 300 cm long optical light cable, camera head with integrated image processing module, adapter to connect all types' scopes, tubings to connect irrigation and insufflations, keyboard &amp; foot pedal to control functions.</p>	<b>0.33</b>

		<p><b>3. Manufacturing Standards and other terms:</b></p> <p>a. Manufacturer must be EC certified for full &amp; production Quality Assurance.</p> <p>b. Manufacturer must be ISO-13485:2003 &amp; ISO-9001:2008 for quality standards.</p> <p>c. Manufacturer should quote FDA, CE, UL or BIS approved product, minimum three years from this ITB.</p> <p>d. Product should have IEC safety standards wherever listed. All products should be IEC 601-1, CE certified according to MDD.</p> <p>e. Manufacturer should have minimum 15 installations in government institutions including veterinary institutes/ICAR centres/Animal Husbandry Department.</p> <p>f. Must have a veterinary training centre in India.</p> <p>g. Manufacturer should have service centre in India with one regional service engineer placed preferably in the state.</p> <p><b>4. Warranty:</b></p> <p>All units must be covered under standard warranty for a period of 24 months from the date of installation.</p> <p><b>Note:</b> The core operating laparoscope like telescopes, endovision, single chip camera, light source, CO<sub>2</sub> insufflator, hand instruments fiber optic cable etc. should be from <u>single manufacturer for system compatibility.</u></p>																																																													
<b>L. Department of Animal Biotechnology</b>																																																															
<b>18.</b>	<b>High End Computing System</b>	<table><tr><td><b>1</b></td><td><b>Component</b></td><td><b>Specification</b></td></tr><tr><td></td><td>Processor</td><td>2 x Intel Haswell E5-2620v3 (Six-core, 2.4 GHz, 15M, 8.0GT/s)</td></tr><tr><td></td><td>Chipset</td><td>Intel ® C612 Express Chipset</td></tr><tr><td></td><td>RAM</td><td>4 x 8GB (Total 32GB) DDR4-2133 ECC REG. (Max 1TB, 16 DIMMs)</td></tr><tr><td></td><td>HDDs</td><td>2 x 1000GB SATA Enterprise 7200 RPM 3.5" HDDs</td></tr><tr><td></td><td>RAID</td><td>SATA3 via Intel ® C612; RAID 0, 1, 5, 10 Onboard</td></tr><tr><td></td><td>Management</td><td>IPMI 2.0 with virtual media over LAN and KVM –over-LAN support</td></tr><tr><td></td><td>Graphics</td><td>ASPEED AST2400 BMC Onboard</td></tr><tr><td></td><td>Infiniband Card</td><td>1 x 56Gbps FDR Infiniband HCA + Cable of suitable length</td></tr><tr><td></td><td>NIC</td><td>Dual Intel ® i350 Gigabit (10/100/1000Mbps) Ethernet onboard</td></tr><tr><td></td><td>Exp. Slots</td><td>2 x PCI-E 3.0 x 16 (FHHL) - via riser card (1 free slot)</td></tr><tr><td></td><td>Ports</td><td>1 x serial, 4 USB 3.0, 1 x VGA, 2 x RJ45 LAN ports, 1 x RJ45 Management Port</td></tr><tr><td></td><td>Master Node Chassis</td><td>1U rackmountable with mounting Rails (4 x 3.5" Hot-swap SAS/SATA HDD Bays)</td></tr><tr><td></td><td>P. Supply</td><td>700 W Redundant Power Supplies Platinum Level High-efficiency</td></tr><tr><td colspan="3"><b>Computer Nodes (Four)</b></td></tr><tr><td></td><td>Processor</td><td>2 x Intel Haswell E5-2620V3 (Ten -core, 2.3 GHz, 25M, 9.6GT/s) (Ready 20 Cores)</td></tr><tr><td></td><td>Chipset</td><td>Intel ® C612 Express Chipset</td></tr><tr><td></td><td>RAM</td><td>4 x 32GB (Total 128GB) DDR4-2133 ECC REG. (Max 512GB, 08 DIMMs) (Populated with 4GB/core)</td></tr><tr><td></td><td>HDDs</td><td>1 x 1000GB SATA Enterprise 7200 RPM 3.5" HDDs (3 x 3.5" Hot-swap SATA3 HDD Bays)</td></tr><tr><td></td><td>RAID</td><td>RAID 0, 1, 5, 10 Onboard</td></tr></table>	<b>1</b>	<b>Component</b>	<b>Specification</b>		Processor	2 x Intel Haswell E5-2620v3 (Six-core, 2.4 GHz, 15M, 8.0GT/s)		Chipset	Intel ® C612 Express Chipset		RAM	4 x 8GB (Total 32GB) DDR4-2133 ECC REG. (Max 1TB, 16 DIMMs)		HDDs	2 x 1000GB SATA Enterprise 7200 RPM 3.5" HDDs		RAID	SATA3 via Intel ® C612; RAID 0, 1, 5, 10 Onboard		Management	IPMI 2.0 with virtual media over LAN and KVM –over-LAN support		Graphics	ASPEED AST2400 BMC Onboard		Infiniband Card	1 x 56Gbps FDR Infiniband HCA + Cable of suitable length		NIC	Dual Intel ® i350 Gigabit (10/100/1000Mbps) Ethernet onboard		Exp. Slots	2 x PCI-E 3.0 x 16 (FHHL) - via riser card (1 free slot)		Ports	1 x serial, 4 USB 3.0, 1 x VGA, 2 x RJ45 LAN ports, 1 x RJ45 Management Port		Master Node Chassis	1U rackmountable with mounting Rails (4 x 3.5" Hot-swap SAS/SATA HDD Bays)		P. Supply	700 W Redundant Power Supplies Platinum Level High-efficiency	<b>Computer Nodes (Four)</b>				Processor	2 x Intel Haswell E5-2620V3 (Ten -core, 2.3 GHz, 25M, 9.6GT/s) (Ready 20 Cores)		Chipset	Intel ® C612 Express Chipset		RAM	4 x 32GB (Total 128GB) DDR4-2133 ECC REG. (Max 512GB, 08 DIMMs) (Populated with 4GB/core)		HDDs	1 x 1000GB SATA Enterprise 7200 RPM 3.5" HDDs (3 x 3.5" Hot-swap SATA3 HDD Bays)		RAID	RAID 0, 1, 5, 10 Onboard	<b>0.25</b>
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			Graphics	ASPEED AST2400 BMC Onboard	
			Infiniband Card	1 x 56Gbps FDR Infiniband HCA + Cable of suitable length	
			NIC	Dual Intel ® i350-AM2 Gigabit (10/100/1000 Mbps) Ethernet	
			Exp. Slots	1 x PCI-E 3.0 x 16 (LP) slot (Populated with Infiniband HCA)	
			Ports	1 x serial, 2 USB 3.0, 1 x VGA, 2 x RJ45 LAN ports, 1 x RJ45 Management Port	
			Compute Nodes Chassis	2U rack-mountable with mounting Rails (4 Hot-Pluggable Server nodes in single 2U Chassis)	
			P. Supply	1620 W Redundant Power Supplies Platinum Level (94%)	
		2	Gigabit Ethernet Switch	24 Port 10/100/1000 Rack mountable Switch	0.10
		3	Infiniband Switch	12 Ports, 56 Gbps Switch with rail kit	0.10
4	KVM Switch & Monitor	16 ports PS/2 – USB KVM Switch with 17” TFT With built-in keyboard & touchpad in a 1U single rail side away housing.	0.10		
5	Rack	42U, 19” Standard Rack	0.10		
<b>M. College of Food Processing Technology &amp; Bio-Energy</b>					
19.	Pycnometer – 1 Set	Gas pycnometer suitable for measuring the true density of a wide variety of food materials. Gas pycnometer must be only from reputed manufacturing companies such as M/s Micrometrics, USA, M/s Thermo Fisher Scientific, M/s Quantachrome Instruments, USA. It should have following features: 1. No. of sample chamber: 1 2. Sample chamber size: 10cc, 25cc, 50cc and 100 cc (2 No. of each) (If the above sizes are not available, the nearest to above sizes must be quoted) 3. Temperature (Helium): 18 to 35 oC(±0.01 oC) 4. Calibration spheres: The calibration spheres corresponding to the offered cells must be quoted and details be given in technical bid 5. Ports: USB and Ethernet 6. Software features: i. It should be Windows based ii. It should include automatic pressure and volume calibration routines iii. It should have the feature to retest the same sample a number of time till the user defined convergence is achieved. 7. Controlling Unit: Pycnometer must accompany a PC as controlling unit with the following or better specifications: Intel Core i5, 3.2 GHz, 4 GB RAM, 1 TB Hard disk, DVD RW drive, 17”LED monitor, Windows preinstalled. 8. Helium gas cylinder fitted with regulator and necessary pipings. <b>The system should be complete in all respect and rates be quoted including installation and commissioning.</b>			0.30
20.	Wrapping and Packaging Unit – 1 Set	<b>Quote single rate for total items A to H</b> Wrapping and Packaging system(suitable for packaging of food stuff/ beverages etc.) should consisting of following: <b>A) Liquid Pouch Packing Machine:</b> It should be compatible for packaging of water, juices, milk, butter milk			0.25

		<ol style="list-style-type: none"> <li>1. Filling range: 100- 250 ml</li> <li>2. Packaging film: LDPE/HDPE</li> <li>3. Power: Single phase 0.5 HP</li> <li>4. Filling System: Timer filler</li> <li>5. Center sealing with digital seal timer</li> </ol> <p><b>B) Continuous Band Sealer - 02 Nos.</b></p> <ol style="list-style-type: none"> <li>1. Specially designed to seal bags made from thick film</li> <li>2. Should be made up of Stainless steel</li> <li>3. Voltage (V/Hz): 220/50</li> <li>4. Power (W): 230</li> <li>5. Heat Sealing Power (w): 300x4</li> <li>6. Sealing Speed (m/min): 0 ~ 10</li> <li>7. Sealing Width (mm): 8 ~ 10</li> <li>8. Temperature range (Deg °C):0 ~ 300</li> <li>9. Conveyor size (L x W) mm:1400x250</li> <li>10. Film Thickness (mm): 0.12 to o.18</li> <li>11. Single Conveyor Loading (Kg): 5</li> <li>12. Overall Conveyor Loading (Kg):15</li> </ol> <p><b>C) Foot Sealer- 02 Nos.</b></p> <ol style="list-style-type: none"> <li>1. Type: Impulse type</li> <li>2. Sealing Length(mm): 650</li> <li>3. Sealing Width(mm): 2 ~ 5</li> <li>4. Input Voltage (V/Hz): 220/50</li> <li>5. Heating Time(sec.): 0 ~ 2.5</li> <li>6. Impulse Power (w): 1500</li> </ol> <p><b>D) Hand Impulse Sealer- 04 Nos.</b></p> <ol style="list-style-type: none"> <li>1. Voltage(V/Hz): AC 220/50</li> <li>2. Impulse Power(W): 600</li> <li>3. Sealing Length(mm): 400</li> <li>4. Sealing Width (mm): 3</li> <li>5. Max. Seal Thickness(mm): 0.3</li> <li>6. Heat Time(s): 0.2-1.3</li> </ol> <p><b>E) Shrink Tunnel- 01No.</b></p> <ol style="list-style-type: none"> <li>1. Hot-wind &amp; down-cyclone structure, intelligence temperature control and AC variable speed regulation</li> <li>2. Roller type conveyor belt</li> <li>3. Tunnel Size (W x H) mm: 450 x 250</li> <li>4. Voltage (V/Hz): 220/50 -380 / 50</li> <li>5. Power Consumption (KW): approx. 6.5</li> <li>6. Conveyor Loading (Kg): 10</li> <li>7. Speed (m/min.): 0~10</li> <li>8. Heating Time (minutes): 10</li> <li>9. Cooling Time (minutes): 15</li> </ol> <p><b>F) Semi-Automatic L-Sealer- 01 No.</b></p> <ol style="list-style-type: none"> <li>1. L-seal cutting machine shall convey the products automatically into shrink tunnel through conveying belt for shrink packaging after sealing &amp; cutting.</li> <li>2. height of conveyor belt shall be adjusted with hand wheel</li> <li>3. protection mechanism for sealing knife against overheating and cutting</li> <li>4. Voltage (V/Hz): AC 220/50</li> <li>5. Power (kw): 1- 1.2</li> <li>6. Packing speed (pcs/h): 800~1200</li> <li>7. Max packaging dimension (L×W×H) (mm): 450×400×300</li> <li>8. Max sealing dimension (L×W) (mm): 500×450</li> <li>9. Powder coated MS Body</li> </ol> <p><b>G) Shrink Chamber- 01 No.</b></p> <ol style="list-style-type: none"> <li>1. Combines sealing with shrinking into one step</li> <li>2. Suitable for all kinds of shrink films such as PVC, POF, PP etc.</li> <li>3. The cover shall be transparent for the visibility of the process of sealing, cutting and shrinking.</li> </ol>	
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		4. Voltage ( V/Hz): AC 220 /50 5. Power (kw): Approx. 4 6. Packing Speed(pcs/h): 700 ~ 1000 7. Max Packing Dimensions: 450 x 300 x 250 <b>H) Pallet Truck- 03 No.</b> 1. Capacity(Kg): 2000 2. Min. fork Height (mm): Approx. 85 3. Max. fork Height (mm): Approx.195 4. Lifting height (mm): Approx.110 5. Fork Length(mm): Approx.1150 6. Single fork Width(mm): Approx.200 7. Fork overall width(mm): Approx.550 8. Fork wheel single(mm): Approx.80x93 9. Fork wheel tandem(mm): Approx.180x50 10. Steering wheel (mm): Approx.180 The system should be complete in all respect and inclusive of installation, testing and commissioning with training to the faculty.	
21.	<b>Line Conditioning System with Power Back-up – 1 Set</b>	Quote single rate totaling for all the items A to C. Line conditioning system should consist of the following items: <b>(A) Ultra Isolation Transformer (90 KVA) - 2 Nos</b> 1. Input voltage: 415V,±1% 2. Output voltage: 415V, ±1% 3. Over load capacity: 125% 10 min., 150% 1 min. 4. Voltage : 170-270VAC 5. Regulation: 3% 6. Ratio : 1:1 7. Coupling capacitance : 0.005pf 8. CMRR : 80db 9. Insulation : Class F 10. Input-Output : Isolated 11. Cooling :Air cooled <b>(B) Servo Controlled Voltage Stabilizer (90 KVA)- 2 Nos</b> 1. Load : 2000W 2. Input Frequency: 47-53Hz 3. Output Regulation: -1% 4. Response Time: 10msec 5. Output Wave form: True to input 6. Efficiency: more than 94% 7. Ambient Temp.: 15 °C-50 °C 8. Duty Cycle: 100% continuous 9. Effect of load on PF: Nil 10. Control Circuit: IC based solid state without relay plug in card for easy on line serviceability 11. Correction Method: Step less correction using auto variable transformer 12. Overload capability: up to 200% momentarily 13. No load losses: less than 1% entire range 14. Additional facility: manual operation 15. Mounting: Buffer 16. Control Panel: Low/high/normal indicator, Input- output metering, Auto manual mode, selector switch, Manual output voltage adjustment switch etc. 17. Cooling: Oil Cooled <b>(C) 15 KVA On-Line UPS- 6 Nos</b> 1. Technology : Inverter device IGBT based, Microprocessor controlled, Double Conversion True Online UPS 2. Input: 415 VAC- 3Phase 3. Input voltage : 370 - 470VAC 4. Output Voltage : 230V±1%, single phase 5. Output Frequency regulation: Free running Mode 50/60 Hz ±	0.60

		<p>0.5%, Sync Mode 50/ 60Hz <math>\pm</math> 2 Hz</p> <p>6. Harmonic Distortion(THD): &lt;4% (linear load), &lt;5% (non-linear load)</p> <p>7. Output Waveform: Pure Sine wave</p> <p>8. Crest Factor : 3:1</p> <p>9. Output Power Factor : 0.8</p> <p>10. Battery Backup : 4 Hour full load</p> <p>11. Battery Type : Sealed Maintenance Free VRLA type.</p> <p>12. Battery Make : Exide/Rocket/Quanta</p> <p>13. Electrical Protection: Input /output/under voltage, over temperature, overload, short circuit, battery low trip</p> <p>14. Alarm : Line Failure, battery law, transfer to bypass &amp; system fault</p> <p>15. Communication Interface : RS-232</p> <p>16. LED Indication : Load or battery capacity</p> <p>17. Noise level : &lt;45db</p> <p>18. Standards : EN50091,-1-1.IEC62040-2,IEC61000-3-2,IEC61000-3-3</p> <p>19. Communication Interface: RS-232</p> <p>20. Efficiency : &gt;90%</p> <p>The system should be complete in all respect and the rates be inclusive of installation, testing and commissioning at site.</p>	
22.	<b>Solar PV System –</b> 1 Set	<p><b>Quote single rate for 20 kW Solar PV Plant totaling for all the items A to D and inclusive of all charges for statutory and regulatory approval, comprehensive AMC for 3 years and all taxes.</b></p> <p>The system should comprise of following: A 20 kW roof top grid tied without battery solar photovoltaic power system having following major components:</p> <p><b>A) Solar PV Modules:</b> Multi/Poly crystalline Si of reputed MNRE approved company, Indian brand with IEC 61215/IS 14286 standards and have TUV certification. 250-300Wp module rating, each module has 29.2 V Pmax Voltage, 7.85 A Pmax Current with 36.5 V open-circuit voltage and 8.35 A short circuit current and should have more than 15 % efficiency. Solar PV modules /panels must have only +ve tolerance to Wp rating and no <math>\pm</math> tolerance will be acceptable. SPV Panel should comply salt, mist &amp; corrosion resistance as per IEC 61701, Industry Standard as per IEC 61215 for design &amp; standard, IEC 61730 Part I &amp; II.</p> <p>Copies of all the relevant IEC Certificates for product offered along with valid test reports be enclosed. It is mandatory for bidder to have valid test report of modules and test certificate of respective solar panel with similar or larger capacity from Govt. approved laboratories.</p> <p><b>B) Module Mounting Structure:</b> Modules shall be mounted on a non-corrosive support structure suitable for site conditions with facility to adjust tilt to maximize annual energy output. Support structure design must have adequate strength and foundation or fixation mounting arrangements shall withstand minimum horizontal wind velocity up to 150 kmph. The structures be made of hot dipped galvanized MS with minimum 80 micron thickness and with SS fittings. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly. The structures shall be so designed that it will occupy minimum space without sacrificing the output. The legs of the structure, will be fixed and grouted in the</p>	1.00

		<p>PCC/RCC foundation columns made with 1:2:4 cement concrete. The design should allow easy replacement of any module and should be in line with site requirements.</p> <p><b>C) Grid Tied Inverter / PCU:</b> The unit of reputed make (Kaco/ Darfon/ Danfoss or equivalent) should comprise of regulated, high efficiency, pure sine wave, inverter, MPPT solar charge controller, 3-phase &amp; RS 485, IP65. It should have suitable central monitoring system, irradiation/temperature sensor, data logger connected, alarm facility, auto grid charger, intelligent logic control scheme with solar priority. Inverters should comply efficiency measurements &amp; environmental testing as per IEC 61683 &amp; IEC 60068.</p> <p><b>D) DC/AC Cable Junction Combine Boxes:</b> The array junction boxes shall be dust, vermin and water proof and made of FRP. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points. The junction boxes shall have suitable arrangement for combine groups of modules into independent charging. Sub-arrays that shall be wired to PCU provide arrangement for disconnection for each group (Isolation), provide a test point for each sub-group for quick fault location. Rating of JB's shall be suitable with adequate safety factor to inter connect solar PV array. DC distribution board shall be provided in between PCU and solar array shall have all MCCB of suitable rating for connection and disconnection of input &amp; output. It shall have all meters for measuring array voltage and current. AC distribution board shall be provided in between PCU &amp; grid interface. ACDB shall have MCCB of suitable rating for connection and disconnection. It shall have output indication lamps, voltmeter, ammeter and energy meter. All the cables shall be conforming to IS 1554/694 Part I of 650 V 1.1 kV grade as per requirement. Only PVC copper UV stabilized cables shall be used. The size of the cables between array interconnections, array to junction boxes, junction boxes to PCU etc shall be so selected to keep the voltage drop and losses to the minimum. Cables should withstand general test &amp; measuring methods for working voltages up to &amp; including 1100V, should comply IEC 60189, IS 694 / IS 1554, IS / IEC 69947. Switchgears, Circuit Breakers / Connectors should comply IS / IEC 60947 part I, II, III, EN 50521. Junction Boxes / Enclosures should meet IP 65 for outdoor and IP 21 for indoor installations as per IEC 62208. Appropriate wind, earthing, and surge protection units should be included.</p> <p>Technical details of all major components offered along with product catalogues to be submitted. Drawing / SLD of the system should to be submitted. The plant should be complete in system design engineering and include all civil activities including of module foundation, cable conduit construction, installation, commissioning of all electrical components, project planning &amp; controlling and all technical support &amp; documentation required for statutory &amp; regulatory approvals like getting NOC / Consent from MGVCL, Approval/ Inspection/ Consent from Chief Electrical</p>	
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		<p>Inspector, installation of MGVCL approved Bi-Directional meter and IEC 612215 &amp; IEC 61730 certifications. The bidder should be an approved MNRE Channel Partner for minimum two years with minimum 3B rating and should have experience of supply &amp; installation of grid connected solar PV system of 15 KWp and more and have standards likes ISO 9001, 14001 &amp; 1800. The bidder should be in solar business for adequate years with a service station within 100 km distance from Anand.</p> <p>The bidder should warrant the system for 5 years against any manufacturing defect and offer comprehensive AMC for 3 years. Price quoted should be inclusive of all charges for complete operational system, clearances, testing installation and commissioning charges, AMC system for 3 years, taxes and others.</p>	
23.	<b>Demineralization Unit for Processed Water</b>	<p>Demineralization unit should be able to provide 1000 litres / 8 h, process water for food purposes having maximum 2-3 mg/l suspended solids from the existing water supply. The system should have following major components:</p> <ol style="list-style-type: none"> <li>1. Feed water tank, 5,000 litre capacity</li> <li>2. Demineralised water tank, 5,000 litre capacity</li> <li>3. It should typically have primary filtration system, activated carbon filtration system, resins, RO, UV system with storage tanks and complete handling system along with pumps to treat water to a turbidity of &lt; 1 NTU</li> </ol> <p>The system should be complete in all respect and include all taxes, installation, testing and commissioning charges, and comprehensive three year AMC.</p>	<b>0.25</b>
24.	<b>Cow Dung Dewatering Machine</b>	<p>A machine suitable for dewatering of digested slurry of biogas plant having cow dung mixed with about 80 %water for water separation. The machine should have about 4 cubic meters per hour capacity. It consists of screw press with extrusion spiral made of twin's wing blades of stainless steel and has stainless steel filter sieve&amp; screws. The machine should be operated by a 7.5 HP electric motor.</p> <p>The system should be complete in all respect with hoppers, piping, fittings, motor, starter, cable etc. The price should include supply, installation, testing and commissioning.</p> <p>Complete with all connections, piping etc. Price should include all testing, installation and commissioning charges of the machine, VAT&amp; other taxes and FOR AAU, Anand.</p>	<b>0.20</b>
25.	<b>Biogas Bottling System</b>	<p>The system should consist of <b>(i) Three stage compressor</b> to compress at least 20 m<sup>3</sup>/h purified biogas from normal atmospheric pressure to 200 bar pressure with suitable fire proof motors and have gas flow measuring mechanism for both inlet &amp; outlet &amp; NRV fittings. <b>(ii) Dispensing System &amp; Cylinders</b> should have suitable size dispenser to fill 20 m<sup>3</sup>/h compressed biogas at 200 bar pressure in a cascade of twin CNG cylinders at a time. A cascade of two high pressures seamless CNG cylinders of reputed make (Maruti/ Koatsu) having 10 kg compressed biogas (at 200 bar pressure) filling capacity be supplied. The system be complete in all respect with all connections, piping, in-built safety features etc. Price should include installation and commissioning.</p>	<b>0.50</b>
<b>PART-II: LABORATORY FIXTURES</b>			
1.	<b>Furnishing of Food Sensory Lab</b> - 1 Set	<p>Providing and fixing laboratory working tabular fixtures of different sizes and designs as indicated.</p> <p><b>Quote single rate for total of A + B. The indicative specifications are given below and the line diagram of each with dimensions are attached.</b></p> <p><b>A) Sensory Module:</b> 2 nos. each of 5 booths (<b>Fig. A</b>)</p> <p>The module should be comprised of sliding door, lighting, electrical</p>	<b>0.25</b>

		<p>connections, etc. complete in all respect. The working surface will be of powder coated metallic sheet on which toughened glass of 8mm thickness is to be fitted and supported on tubular/ angle structure frame duly powder coated. There should be appropriate provision for light on the top of the table as shown in the sensory module.</p> <ol style="list-style-type: none"> <li>Booth Size : - 900mm L X 600mm D Each booth should have facility of sliding door of size –500 mm X 300 mm H, opening rotary hatch / hatch with vertical Sliding</li> <li>Lighting in each booth shall be uniform, glair free, shadow free, comfortable with dimmer device</li> <li>Each booth should have-             <ol style="list-style-type: none"> <li>Cold Light (Day Light) with a colour, Temp. of 5600 – 6200 Kelvin and 1000 – 1500 Lux</li> <li>Red, Blue and Yellow UV Tubes – 01 No. each in each booth</li> </ol> </li> <li>Communication circuit for word less communication between the Test person and Testing personnel</li> <li>Provision for computer, monitor, key board drawer etc. in each booth</li> <li>Electrical Points in each booth for computer – 16A switch socket – 05 Nos.</li> </ol> <p><b>B) MS Fixtures</b> The fixtures should be as per drawing shown in <b>Fig. B</b>. MS platform should be made of MS fixtures having 600 mm L x 550 mm W x 850 mm H with top of jet black granite of desired length x 850 mm W x 17±1 mm thickness, duly polished and moulded, levelled on 6 mm ply and have SS 304 sink. Workbench should have knockdown type modular under bench steel cabinet having sturdy frame, panels, legs, one drawer (460 mm W x 530 mm L x 100 mm H), two shutters having 450 mm H with lock and shelves fabricated using GMP of scientific laboratory equipment from cold rolled steel sheet (Tata or equivalent make) of prime grade having minimum 20 gauge thickness or CRC pipe of 30 mm x 30 mm x 16 gauge thickness. The module should be strong enough to bear load of 1000 kg/m<sup>2</sup> and be provided with strong brackets and stiffners. All metal be epoxy powder coated with minimum 50 micron and finished with desired colour shades as per ASTM/BS/DIN/IS. All the hardware be BIS grade of reputed make including drawer pulls of double extension telescopic side channels, auto closing spring loaded hinges with cathode electrode deposition for better corrosion resistance, Godrej make locks, shelf support clips, stainless steel handles and SS sink etc. The drawer and cabinet should be strong enough to carry about 50 kg load of different articles. Corner sink unit with SS water taps, two shutters duly mounted on separate SS pedestal strong enough and made from SS 304 section of minimum 2 mm thickness. <b>For any query, the site at College of FPTBE can be visited.</b></p>	
2.	<b>Furnishing of Food Development Lab – 1 Set</b>	<p>Providing and fixing laboratory working tabular fixtures of different sizes, designs and specifications as indicated below and as per attached line diagram in <b>Fig. C</b>. <b>Quote single rate for total modules inclusive of platforms, utilities and fume hood etc. (A to D)</b> <b>A) Cooking modules</b> of 1200 mm L x 750 mm W x 900 mm H – <b>12 Nos.</b> (as A3 to A14 in diagram) and 1200 mm L x 900 mm W x 900 mm H - <b>4 Nos.</b> (as A1, A2, A15, A16) having 17mm ± 1mm thick Jet Black single granite top with inbuilt double burner SS 304 cooking range of approved brand along with two SS 304 drawers (450-2D-450 mm) fitted with SS baskets one for dishes, thali and other utensils and 750-2D-750mm SS 304 under bench</p>	<b>0.50</b>

		<p>storage fitted with adjustable shelf and two shutters. The module should have one reagent rack (1200 mm L x 150 mm W x 600 mm H) fabricated with SS 304 sections and sheet not less than 1 mm thick complete with two shelves, one 20 A MCB and two 16 A five point plug sockets of approved reputed make.</p> <p>The whole module be strong and robust with complete pedestal made of minimum 2 mm thick SS 304 sections.</p> <p><b>B) Oven rack modules</b> of 750 mm L x 750 mm W x 900 mm H- <b>6 Nos.</b> (as B2 to B7 in diagram) and 750 mm L x 900 mm W x 900 mm H - <b>2 Nos.</b> (as B1 &amp; B8 in diagram) having 17mm <math>\pm</math> 1mm thick Jet Black single granite top with rack with adjustable shelves made from SS 304 sections/ sheets of minimum 1 mm thickness, strong enough and suitable for microwave/ baking ovens. The module should be complete with two nos. of 20 A MCB and 16 A sockets of approved reputed brand.</p> <p><b>C) Side module</b> of 12300 mm L x 750 mm W x 900 mm H – <b>1 No.</b> having 17mm <math>\pm</math> 1mm thick Jet Black granite top with seven numbers of SS sink units (750- 2S) and one number of corner sink unit along with SS water taps, two shutters duly mounted on separate SS pedestal strong enough and made from SS 304 section of minimum 2 mm thickness.</p> <p><b>All modules as mentioned in A, B and C should be complete in all respect with SS hinges, Godrej double action locks, SS handles, telescopic channels, baskets, shelves, etc all of SS 304 or higher grade duly fixed and fitted as per the geometry of the laboratory. Utilities as below should be also provided as per the requirement</b></p> <ol style="list-style-type: none"> <li>1. Water pipe line with individual sink, with necessary fittings.</li> <li>2. UPVC drainage pipe line from each sink outlet to drainage with necessary fittings.</li> <li>3. Gas line as per IS standard centrally connected with 16 Nos. cooking range with individual on/off from gas cylinder store/ PNG line.</li> <li>4. Electrical wiring and connections</li> </ol> <p><b>D) Fume Extracting Unit</b> complete for all 16 cooking ranges duly made of SS 304 suction hopper fitted with SS grill and oil traps and connected with centrally G.I. powder coated ducting fitted with adequate size blower and chimney.</p> <p>The blower should be of adequate capacity with motor and starter and it should be fixed outside the laboratory with appropriate size chimney. The suction should be sufficient enough to avoid any fumes, smokes, vapours etc. from the entire area.</p> <p><b>For any query, the site at College of FPTBE can be visited.</b></p>	
3.	<p><b>Furnishing of Food Rheology and Microstructure Lab</b> - 30 Sq. Ft.</p>	<p>MS platform should be made of MS fixtures having 600 mm L x 550 mm W x 850 mm H with top of jet black granite of desired length x 850 mm W x 17<math>\pm</math>1 mm thickness, duly polished and moulded, levelled on 6 mm ply and have SS 304 sink. Workbench should have knockdown type modular under bench steel cabinet having sturdy frame, panels, legs, one drawer (460 mm W x 530 mm L x 100 mm H), two shutters having 450 mm H with lock and shelves fabricated using GMP of scientific laboratory equipment from cold rolled steel sheet (Tata or equivalent make) of prime grade having minimum 20 gauge thickness or CRC pipe of 30 mm x 30 mm x 16 gauge thickness. The module should be strong enough to bear load of 1000 kg/m<sup>2</sup> and be provided with strong brackets and stiffeners.</p> <p>All metal be epoxy powder coated with minimum 50 micron and finished with desired colour shades as per ASTM/BS/DIN/IS. All the hardware be BIS grade of reputed make including drawer pulls of double extension telescopic side channels, auto closing spring loaded hinges with cathode electrode deposition for better corrosion</p>	0.02

		<p>resistance, Godrej make locks, shelf support clips, stainless steel handles, etc. The drawer and cabinet should be strong enough to carry about 50 kg load of different articles.</p> <p><b>Cable Trench</b> of 2000 mm length fitted with 8 Nos of 16 amp shock proof electrical plug socket with 8 Nos of 16 amp MCB of BIS mark. The trench should be made from CRCA sheet of 1 mm thickness and shaped as desired and powder coated.</p> <p>The fixtures should be as per <b>drawing shown at D.</b></p> <p><b>For any query, the site at College of FPTBE can be visited.</b></p>	
4.	<b>Furnishing of Food Irradiation Lab – 30 Sq. Ft.</b>	<p>MS platform should be made of MS fixtures having 600 mm L x 550 mm W x 850 mm H with top of jet black granite of desired length x 850 mm W x 17±1 mm thickness, duly polished and moulded, levelled on 6 mm ply and have SS 304 sink. Workbench should have knockdown type modular under bench steel cabinet having sturdy frame, panels, legs, one drawer (460 mm W x 530 mm L x 100 mm H), two shutters having 450 mm H with lock and shelves fabricated using GMP of scientific laboratory equipment from cold rolled steel sheet (Tata or equivalent make) of prime grade having minimum 20 gauge thickness or CRC pipe of 30 mm x 30 mm x 16 gauge thickness. The module should be strong enough to bear load of 1000 kg/m<sup>2</sup> and be provided with strong brackets and stiffeners.</p> <p>All metal be epoxy powder coated with minimum 50 micron and finished with desired colour shades as per ASTM/BS/DIN/IS. All the hardware be BIS grade of reputed make including drawer pulls of double extension telescopic side channels, auto closing spring loaded hinges with cathode electrode deposition for better corrosion resistance, Godrej make locks, shelf support clips, stainless steel handles, etc. The drawer and cabinet should be strong enough to carry about 50 kg load of different articles.</p> <p>The fixtures should be as per <b>drawing shown at E.</b></p> <p><b>For any query, the site at College of FPTBE can be visited.</b></p>	<b>0.02</b>
5.	<b>Furnishing of Electronic Engineering Lab – 125 Sq. Ft.</b>	<p>MS platform should be made of MS fixtures having 600 mm L x 550 mm W x 850 mm H with top of jet black granite of desired length x 850 mm W x 17±1 mm thickness, duly polished and moulded, levelled on 6 mm ply and have SS 304 sink. Workbench should have knockdown type modular under bench steel cabinet having sturdy frame, panels, legs, one drawer (460 mm W x 530 mm L x 100 mm H), two shutters having 450 mm H with lock and shelves fabricated using GMP of scientific laboratory equipment from cold rolled steel sheet (Tata or equivalent make) of prime grade having minimum 20 gauge thickness or CRC pipe of 30 mm x 30 mm x 16 gauge thickness. The module should be strong enough to bear load of 1000 kg/m<sup>2</sup> and be provided with strong brackets and stiffeners.</p> <p>All metal be epoxy powder coated with minimum 50 micron and finished with desired colour shades as per ASTM/BS/DIN/IS. All the hardware be BIS grade of reputed make including drawer pulls of double extension telescopic side channels, auto closing spring loaded hinges with cathode electrode deposition for better corrosion resistance, Godrej make locks, shelf support clips, stainless steel handles, etc. The drawer and cabinet should be strong enough to carry about 50 kg load of different articles.</p> <p>Corner sink unit with SS water taps, two shutters duly mounted on separate SS pedestal strong enough and made from SS 304 section of minimum 2 mm thickness.</p> <p><b>Cable trench- 02 Nos.</b></p> <p>2000 mm length fitted with 10 Nos. of 16 amp shock proof five point electrical plug socket with 10 Nos. of 16 amp MCB of BIS mark. The trench should be made from CRCA sheet of 1 mm thickness and shaped as desired and powder coated.</p> <p>The fixtures should be as per <b>drawing shown at F.</b></p>	<b>0.08</b>

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6.	PVC Sports Carpet Flooring – 350 Sq.M.	Supplying and fixing of PVC sports carpet flooring of Europe Standard Glass- fiber stable layer and Europe Glass fiber grid stable layer, TPU surface treatment. 100 % pure PVC wear layer, closed foam bottom. Total thickness is 7.0 ± 0.2 mm. Abrasion resistance is ≤ 300 mg, Shock absorption is ≥ 27 %, energy return is 0.4 m/s. Quote for 1 per sq m.			0.10																																																															
PART-III: CONSUMABLE ITEMS																																																																				
A. Department of Agricultural Biotechnology																																																																				
1.	iSelect HD Custom Bead Rice SNP Chip (2 Set – for 96 Samples)	1. The array should comprise of 3 micron features covered with thousands of copies of the desired probes. 2. The array should offer high signal to noise ratio, high sensitivity, low limit of detection and broad dynamic range, all contributing to high call rates of >99%. 3. The workflow should not involve the use of restriction enzymes, and should use PCR free whole genome amplification protocol, leading to no appreciable allelic partiality. 4. The technique should utilise a single bead type array with a dual color channel scanning system. 5. The DNA requirement should not exceed 250 ng per sample. 6. The probes, 50 mer in length, should be covalently linked to the attempted bead types for the array. 7. The data should be analyzed by a software, which calls the genotypes in an automated fashion.			0.15																																																															
B. Department of Animal Biotechnology																																																																				
2.	GS-FLX Sequencing Kit	<table><tr><th>Particulars/Name of Kit</th><th>Aprx. Qty.</th><th>Unit Price</th></tr><tr><td>1. GS Titanium PicoTitrePlate Kit</td><td>10</td><td></td></tr><tr><td>2. GS Titanium LV EmPCR Kit (Lib-L)-1</td><td>10</td><td></td></tr><tr><td>3. GS Titanium EmPCR Bead Recovery Rgt</td><td>10</td><td></td></tr><tr><td>4. GS Titanium EmPCR Reagent LV (Lib-L)</td><td>10</td><td></td></tr><tr><td>5. GS Titanium EmPCR Emulsion Oil LV</td><td>10</td><td></td></tr><tr><td>6. GS Titanium EmPCR Shaker Adapters LV</td><td>10</td><td></td></tr><tr><td>7. GS Titanium EmPCR Breaking Kits LV 12pc</td><td>10</td><td></td></tr><tr><td>8. GS Titanium Sequencing Kit XLR 70</td><td>10</td><td></td></tr><tr><td>9. GS Titanium Sequencing Reagent XLR 70</td><td>10</td><td></td></tr><tr><td>10. GS Sequencing Bead / Wash Buffers-XLR 70</td><td>10</td><td></td></tr><tr><td>11. GS Sequencing Buffer CB</td><td>10</td><td></td></tr><tr><td>12. GS Titanium Sequencing Packing Beads 70 XLR 70</td><td>10</td><td></td></tr><tr><td>13. GS FLX Sipper Tubes</td><td>10</td><td></td></tr><tr><td>14. GS Sequencing Pre-Wash Tubes</td><td>10</td><td></td></tr><tr><td>15. GS FLX Maintenance Wash Kit</td><td>10</td><td></td></tr><tr><td>16. GS FLX Maintenance Wash Inserts</td><td>10</td><td></td></tr><tr><td>17. GS FLX Titanium Rapid Lib. Preparation Kit</td><td>10</td><td></td></tr><tr><td>18. GS Rapid Library Prep. Nebulizers</td><td>10</td><td></td></tr><tr><td>19. GS Rapid Library Buffer Kit</td><td>10</td><td></td></tr><tr><td>20. GS Rapid Library Rgt/Adaptor Kit</td><td>10</td><td></td></tr></table>	Particulars/Name of Kit	Aprx. Qty.	Unit Price	1. GS Titanium PicoTitrePlate Kit	10		2. GS Titanium LV EmPCR Kit (Lib-L)-1	10		3. GS Titanium EmPCR Bead Recovery Rgt	10		4. GS Titanium EmPCR Reagent LV (Lib-L)	10		5. GS Titanium EmPCR Emulsion Oil LV	10		6. GS Titanium EmPCR Shaker Adapters LV	10		7. GS Titanium EmPCR Breaking Kits LV 12pc	10		8. GS Titanium Sequencing Kit XLR 70	10		9. GS Titanium Sequencing Reagent XLR 70	10		10. GS Sequencing Bead / Wash Buffers-XLR 70	10		11. GS Sequencing Buffer CB	10		12. GS Titanium Sequencing Packing Beads 70 XLR 70	10		13. GS FLX Sipper Tubes	10		14. GS Sequencing Pre-Wash Tubes	10		15. GS FLX Maintenance Wash Kit	10		16. GS FLX Maintenance Wash Inserts	10		17. GS FLX Titanium Rapid Lib. Preparation Kit	10		18. GS Rapid Library Prep. Nebulizers	10		19. GS Rapid Library Buffer Kit	10		20. GS Rapid Library Rgt/Adaptor Kit	10				2.00
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3.	Ion Torrent PGM Sequencing Kit	<table><tr><th>Cat. No.</th><th>Name of Kit</th><th>Aprx. Qty.</th><th>Unit Price</th></tr><tr><td>4471269</td><td>1. Ion Xpress Plus Fragment Library Kit</td><td>20</td><td></td></tr><tr><td>4474009</td><td>2. Ion Xpress Barcode Adapters 17-32 Kit</td><td>2</td><td></td></tr><tr><td>4474518</td><td>3. Ion Xpress™ Barcode Adapters 33-48 Kit</td><td>2</td><td></td></tr><tr><td>4474519</td><td>4. Ion Xpress™ Barcode Adapters 49-64 Kit</td><td>2</td><td></td></tr></table>	Cat. No.	Name of Kit	Aprx. Qty.	Unit Price	4471269	1. Ion Xpress Plus Fragment Library Kit	20		4474009	2. Ion Xpress Barcode Adapters 17-32 Kit	2		4474518	3. Ion Xpress™ Barcode Adapters 33-48 Kit	2		4474519	4. Ion Xpress™ Barcode Adapters 49-64 Kit	2				10.15																																											
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		G6610-02	5. E-Gel® Size Select™ Agarose Gels, 2%	100		
		4479789	6. Ion Total RNA Seq Kit V2	15		
		4475485	7. Ion Xpress™ RNA-Seq Barcode 1-16 Kit	5		
		A1083708	8. RiboMinus™ Eukaryote Kit for RNA-Seq	30		
		A1083808	9. RiboMinus™ Plant Kit for RNA-Seq	30		
		K1550-04	10. RiboMinus™ Transcriptome Isolation Kit, Bacteria	50		
		4479878	11. Ion PGM™ Template OT2 400 Kit	15		
		4478525	12. Ion PGM™ Enrichment Beads	50		
		4482002	13. Ion PGM™ Sequencing 400 Kit	30		
		4482261	14. Ion 314™ Chip Kit V2	5		
		4483188	15. Ion 316™ Chip Kit V2	15		
		4484355	16. Ion 318™ Chip Kit V2	15		
		4477113	17. Ion TargetSeq™ Multi Blocker Kit	10		
		4480449	18. Ion PGM™ Controls Kit	5		
		4464418	19. 5500 SOLiD Mate Paired Library Kit	5		
		A25592	20. Ion PGM™ Hi-Q™ Sequencing Kit	30		
		A27739	21. Ion PGM™ Hi-Q™ OT2 Kit	10		
		A25591	22. Ion PGM™ Wash 2 Bottle Kit	3		
4.	MiSeq Illumina Sequencing Kit	<b>Cat. No.</b>	<b>Name of Kit</b>	<b>Aprx. Qty.</b>	<b>Unit Price</b>	4.71
		FC-131-1096	1. Nextera XT DNA Sample Preparation Kit (96 Samples)	5		
		FC-131-1002	2. Nextera XT Index Kit (96 Indexes, 384 Samples)	5		
		RS-122-2101	3. Truseq Standard mRNA LT – Set A	5		
		FC-110-3001	4. PhiX Control Kit V3	10		
		MS-102-2002	5. Miseq Reagent Kit V2 (300 Cycles)	15		
		MS-102-3003	6. Miseq Reagent Kit V3 (600 Cycles)	10		
		RS-200-0012	7. Truseq Small RNA - Set A	2		
		TSRNA12924	8. TotalScript™ RNA-Seq Kit	2		
		TSIDX12910	9. TotalScript™ Index Kit	2		
		RS-301-2001	10. TruSeq RNA Access – Set A	2		
		FC-121-3001	11. TruSeq DNA PCR-Free LT – Set A	2		
		FC-121-4001	12. TruSeq Nano DNA LT – Set A	2		
		FC-132-1001	13. Nextera Mate Pair	2		
		FC-126-1001	14. TruSeq Synthetic Long-Read DNA Library Prep Kit	2		
		FC-126-1002	15. TruSeq Synthetic Long-Read DNA Barcode Kit	2		
		FC-126-1004	16. TruSeq Synthetic Long-Read DNA Accessory Kit	2		
		IP-202-1012	17. TruSeq ChIP-Seq – Set A	2		
		MS-102-2003	18. Miseq Reagent Kit v2 (500 cycles)	15		
		MS-102-3001	19. Miseq Reagent Kit v3 (150 cycles)	10		
		FC-121-1031	20. Nextera DNA Sample Preparation Kit (96 samples)	5		
		FC-121-1012	21. Nextera Index Kit (96 indexes, 384 samples)	3		
		PE-121-1003	22. TruSeq Dual Index Sequencing primer Kit, Paired End	5		
		FC-131-2001	23. Nextera XT Index Kit V2 Set A (96 indexes, 384 samples)	3		
		FC-131-2002	24. Nextera XT Index Kit V2 Set B (96 indexes, 384 samples)	3		

	FC-131-2003	25. Nextera XT Index Kit V2 Set C (96 indexes, 384 samples)	3	
	FC-131-2004	26. Nextera XT Index Kit V2 Set D (96 indexes, 384 samples)	3	
	FC-130-1001	27. TruSeq Custom Amplicon Kit (96 samples)	10	
	FC-130-1003	28. TruSeq Custom Amplicon Index kit (96 indexes, 384 samples)	5	
	RS-122-2001	29. TruSeq RNA Library Preparation kit v2 , Set A (48 samples, 12 indexes)	10	
	RS-122-2101	30. TruSeq Stranded mRNA Library Prep Kit, Set A (48 samples, 12 indexes)	10	
	FC-130-1007	31. TruSeq Index Plate Fixture and Collar Kit (2 each)	3	

### **: Terms & Conditions :**

- i. E-tendering procedure of two bid system i.e. financial and technical has to be followed for quoting the rates / bidding for items.
- ii. **This tender document / form may be procured / downloaded from (n)Code Solutions website [www.nprocure.com](http://www.nprocure.com) from 31-08-2015 upto 21-09-2015, 05:00 P.M.**
- iii. The financial bid / quotation rates / bidding rates for these instruments/ equipment /consumable items has to be uploaded / submitted electronically through [<www.nprocure.com>](http://www.nprocure.com) only **on or before 21-09-2015 6:00 P.M.** Vendors should not mention quoted price anywhere in technical bid.
- iv. **The price quoted should be inclusive of all kinds of taxes and other charges FOR Anand for indigenous instruments and should be valid upto 31<sup>st</sup> December, 2016.**
- v. In case of foreign manufactured equipment the **C.I.F., Ahmedabad** rates be quoted in foreign currency which will be paid by Demand Draft of respective foreign currency. The other charges like minimum custom duty (if applicable), agency commission, clearing, transportation and all other such charges will be paid in Indian Rupees.
- vi. If the rates are quoted in foreign currency, for conversion in INR exchange rate available on RBI's website on the date of opening of commercial bid of the tender shall be considered for comparison.
- vii. No change, addition, alteration in the tender rates on omission / misunderstanding / mistake or any other reasons would be permitted.
- viii. The University is authorized for exemption in Custom Duty / Excise Duty and accordingly the custom duty exemption certificate will be provided by the University to successful bidder.
- ix. The total cost must be inclusive of all intended accessories.
- x. **The hard copy of the technical bid should be addressed to "The Unit Officer, Dept. of Agricultural Biotechnology, Anand Agricultural University, Anand – 388 110".**
- xi. **Technical bids for each item should be dispatched in separate envelopes alongwith all necessary documents and separate DDs for Tender Fee and EMD.**
- xii. **The hard copy of the technical bid should reach this office during the period of physical bid submission i.e. between 22-09-2015 and 29-09-2015 upto 05:00 P.M. in sealed cover superscripted "Technical Bid for \_\_\_\_\_" by Registered Post / Speed post only. The technical bid/documents sent through courier will not be accepted.**

- xiii. The technical bid should be accompanied with Demand Draft (DD) of **Rs. 5,000/-** as tender fee (**non-refundable**) in the favour of "Anand Agricultural University Fund Account" payable at Anand, issued by any Nationalized Bank or banks as authorized by Government of Gujarat vide its GR of Finance Department, GR No.: EMD/10/2014 /570 /DMO, Dated 01-04-2015.
- xiv. EMD amount may be paid through either DD or Bank Guarantee of any Nationalized Bank or banks as authorized by Government of Gujarat vide its GR of Finance Department, GR No.: EMD/10/2014 /570 /DMO, Dated 01-04-2015, in the favour of "Anand Agricultural University Fund Account" and in case of Bank Guarantee validity should be atleast 180 days from the closing date i.e. 21-09-2015.
- xv. **DD of Tender Fee and DD/ Bank Guarantee of EMD has to be scanned and uploaded online.** The original DD has to be submitted along-with the technical bid to "The Unit Officer, Dept. of Agricultural Biotechnology, Anand Agricultural University, Anand – 388 110".
- xvi. Earnest Money Deposit (EMD) for the tender will be refunded after the deal is finalized. However the same will be refunded to the successful bidder only after satisfactory installation / commissioning and testing of the instrument.
- xvii. Those quotations will not be considered for financial bid opening which does not conform to given specifications for a particular instrument and terms and conditions.
- xviii. **Bidder should give specification compliance statement point wise showing / highlighting items part no., serial no. as quoted in their quotation for comprehensive technical comparison. Proof of compliance should be mentioned point wise in the catalogue. Failing in compliance and proof of compliance may cause cancellation of the bid without any further notice.**
- xix. The vendor should invariably sign the quotation, general terms and conditions and must be submitted in original.
- xx. Necessary items like UPS, Air Conditioner, Computer etc. of suitable capacity, if essentially required, for proper operation of the scientific instrument/equipment has to be supplied by the vendor at no additional cost.
- xxi. As far as possible the technical literature should be furnished along with the quotation.
- xxii. If any query to the quotation is raised, a written reply must reach this department within specified period through letter / email or as suggested, else the quotation shall be treated as cancelled.
- xxiii. All quotations and correspondences should be addressed by designation only and not by name.
- xxiv. The supply should be made within the stipulated time as mentioned in the purchase order followed by installation.
- xxv. The equipment should be installed by the service engineer of the vendor at our site free of cost and the working should be demonstrated including training.
- xxvi. Manufacturer's / Distributorship's / Dealership's certificate from the principle for the year 2015-16 must be submitted along with quotation.
- xxvii. Bidder should have a turnover of at least 50% of the cost of the item for which vendor is bidding during any one of the last two years. The necessary documents related to turnover during last two years be submitted alongwith the technical bid.
- xxviii. No advance or part payment against the ordered goods will be made till the full order placed is satisfactorily executed.
- xxix. List of users of your product and their opinion may also be sent along with their phone number/(s).
- xxx. **Warranty:** The standard warranty should be provided for the instrument. Price for the extended full warranty for (5) years for the same could be quoted separately in



technical bid from the date of expiry of standard warranty. In case of trouble, expert service must be provided within 48 hours.

- xxxi. **AMC:** Price of Annual Maintenance Contract after expiry of standard warranty period could be quoted separately in technical bid.
- xxxii. **Training:** Training for two persons must be provided free of cost by the vendor for each instrument quoted.
- xxxiii. **The successful bidder has to deposit 5% of invoice value in the University fund account prior to issue of purchase order by the University/Concerned department/College. This money will remain deposited in University as security deposit till standard warranty period is over.**
- xxxiv. **The security deposit in favour of “Anand Agricultural University Fund Account” may be paid / submitted either in form of DD or Bank Guarantee issued by Nationalized Bank or banks as authorized by Government of Gujarat vide its GR of Finance Department, GR No.: EMD/10/2014 /570 /DMO, Dated 01-04-2015.**
- xxxv. **Rights are reserved with the undersigned to vary number of units, accept the quotation fully or partially and shall not be bound to give reasons for rejecting the whole or part of the quotation.**
- xxxvi. Quotations/ tenders without Earnest Money Deposit (EMD) for specific item will not be considered.
- xxxvii. A copy of the supporting document like, Tin No., PAN No., etc. of the vendor should be enclosed with the quotation / tender.
- xxxviii. Losses/damage of the instrument in transits, if any, shall be at the risk of the vendor / supplier
- xxxix. If the demurrage charges occur due to delay in sending the document/air cargo receipt, the amount of the demurrage will be borne by the vendor / supplier.
  - xl. The technical bid will be opened on 25-09-2015 at 10:30 A.M. for scrutiny followed by commercial bid opening either on the same date or any other next date of completion of technical scrutiny.
  - xli. In the event of the dispute regarding any matter related to acceptance or rejection of tender or consideration of tender for purchase order, decision of Director of Research or Dean Faculty of PG students of Anand Agricultural University, Anand – 388 110, Gujarat or person /persons authorized by him shall remain final.
  - xlii. For all legal matter court jurisdiction shall be “Anand”, Gujarat.

**Sd/-**

**Unit Officer**

Department of Agricultural Biotechnology  
Anand Agricultural University  
Anand 388 110

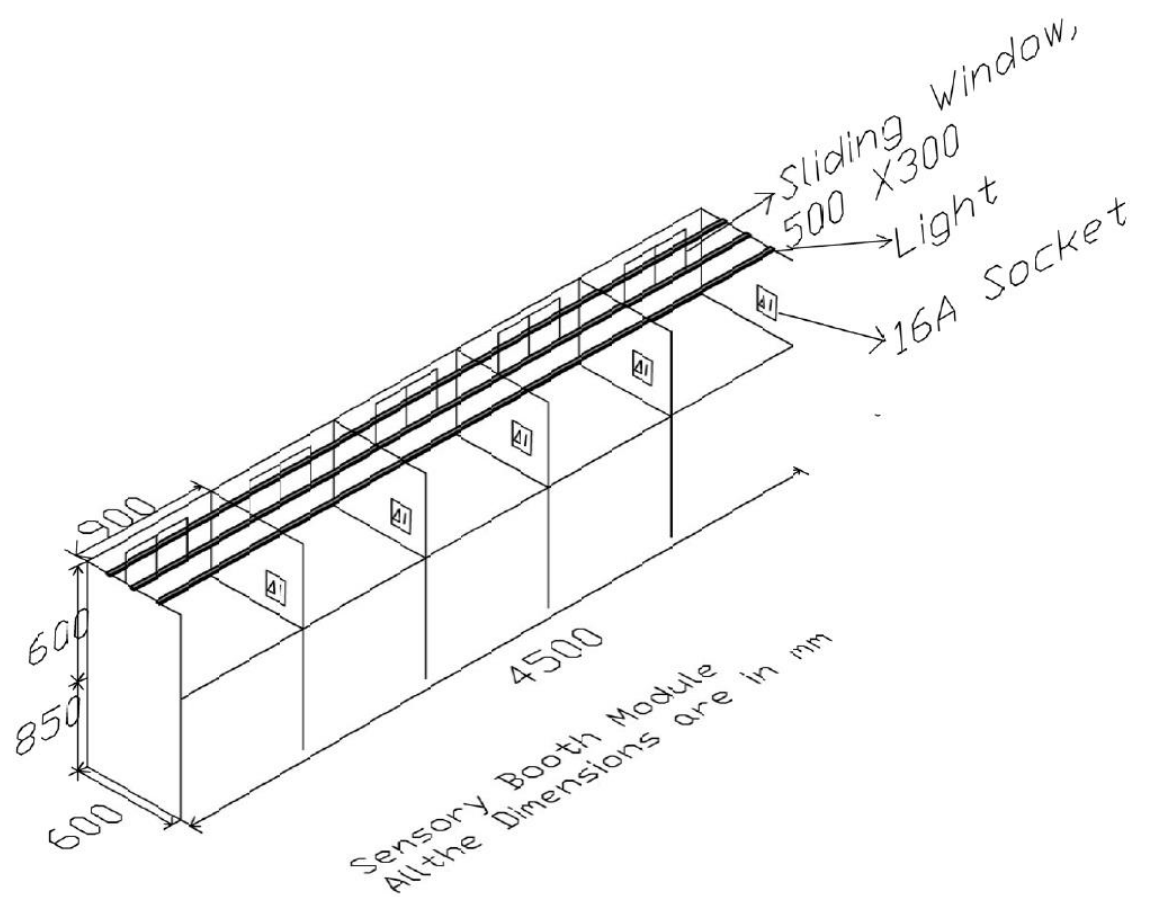
**Note:** To be returned with the quotation duly sealed and signed by the vendor as acknowledgement of acceptance of the terms and conditions otherwise the quotation will be considered as disqualified.

**Signature of Vendor**

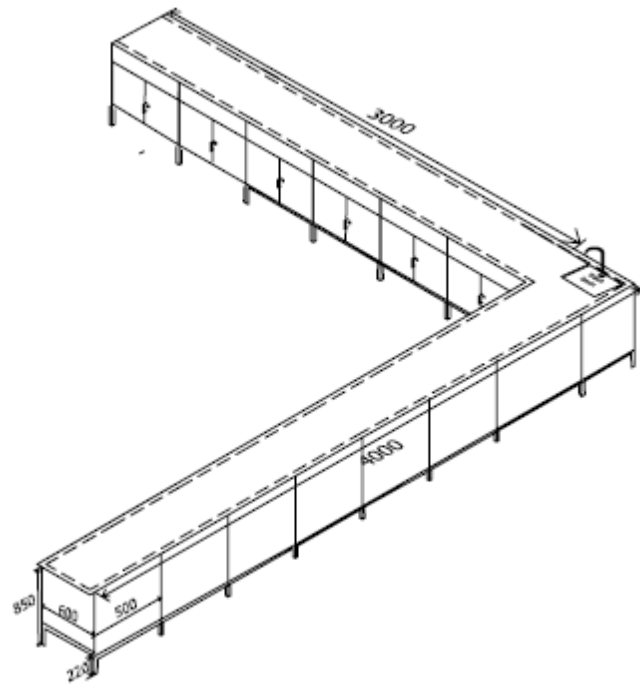
(Rubber Stamp, Address & Phone No.)

**Place:**

**Date:**

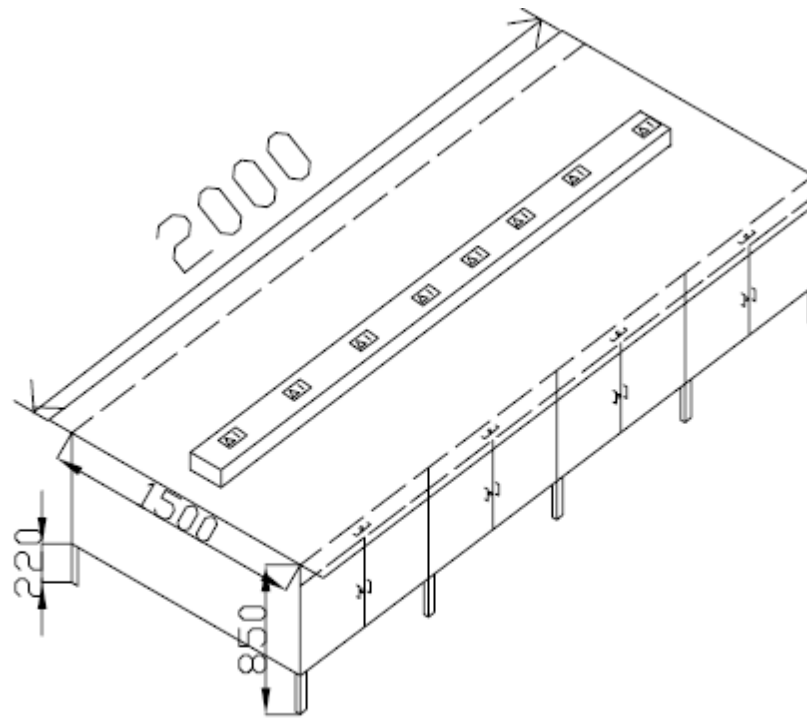


**Fig. A** Indicative drawing of Sensory Booth Module (2 Nos. as per Sensory Lab Design)



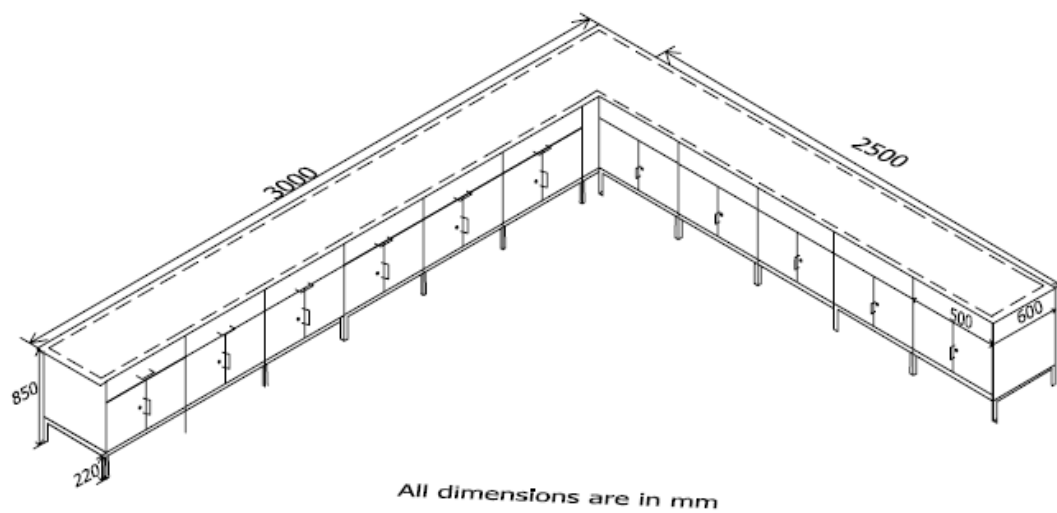
**Fig. B Indicative drawing of MS Lab fixture for Sensory lab**



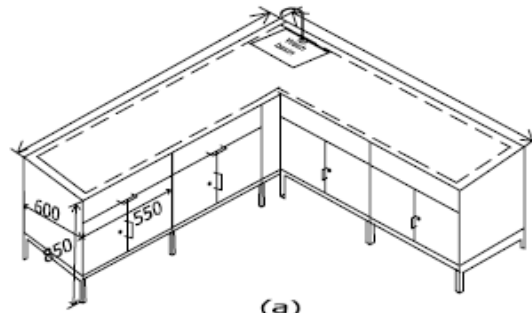


All the dimensions are in mm

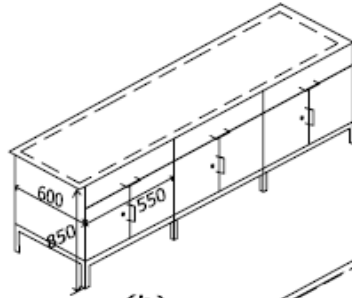
**Fig. D Indicative drawing of MS Lab fixture for Food Microstructure Lab**



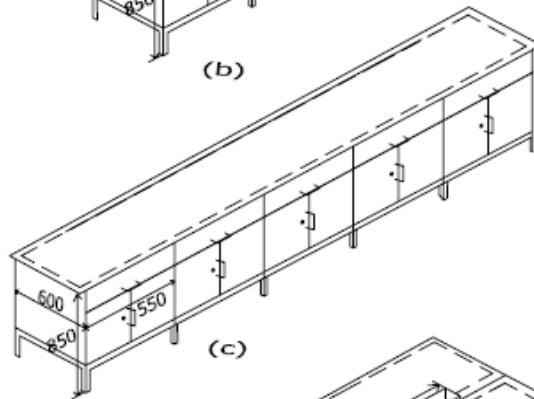
**Fig. E Indicative drawing of MS Lab fixture for Food Irradiation Lab**



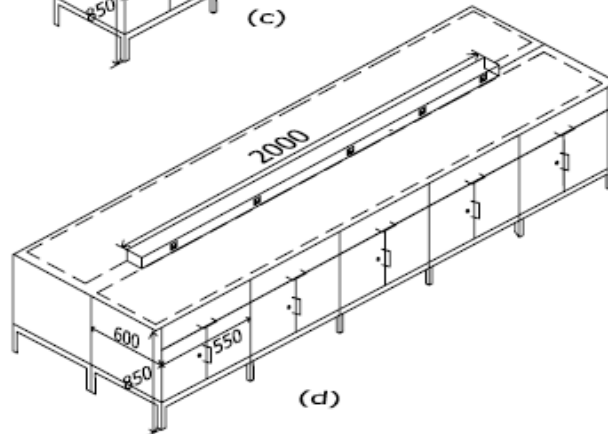
(a)



(b)



(c)



(d)

*All dimensions are in mm*

a) = 1 No. of unit; b) 2 Nos. of unit; c) 1 No. of unit; d) 2 Nos. of unit;

**Fig. F Indicative drawing of MS Lab fixture for Electronics and Instrumentation**