

## Department of Bio-Technology

**Name of Instrument and Make:** UV-VIS Spectrophotometer Model No.119/Systronics

**Cost (in Rs.):** 22,150



### **Specifications &Use:**

- PC Based & Automatic source optimisation & base line correction
- 200 – 1000 nm Range
- Single Wavelength, Multi Wavelength, Scan (with multi scan facility),
- Automatic 5 position sample changer
- Verifying the purity and concentration of RNA and DNA
- To identify individual pharmaceutical compounds
- UV-Vis spectroscopy is often used in bacterial culturing to estimate the cell concentration and to track growth

**Name of Instrument and Make:** Laminar Air Flow Cabinet/Narang

**Grant:**

**Cost (in Rs.):** 1,25,730



### Specifications & Use:

- These are designed to meet the filtrations, illumination, noise & vibration requirements providing particle free air
- These are constructed out of thick duro board duly Sum mica clad. The work table is made of Mica /Stainless steel top and slide panels of thick Plexiglas duly framed.
- The HEPA filter have efficiency rating as high as 99.97% thus retaining all air borne particles of size 0.3 micron and larger.
- It is an enclosed workstation that is used to create a contamination-free work environment through filters to capture all the particles entering the cabinet for microbiology, plant tissue culture and animal tissue culture work.

**Name of Instrument and Make:** Revolutionary Table top High Speed Cooling Centrifuge/REMI

**Grant:**

**Cost (in Rs.):** 1,12,000



### Specifications & Use:

- Stable speed output
- High Capacity & High Speed
- Wide variety of rotors & reduction adaptors
- Precise temperature control up to – 20°C
- Pre-cooling feature
- Calibration window on lid for speed (rpm)
- Used for DNA, RNA and protein isolation

**Name of Instrument and Make:** Orbital Shaking Incubator/REMI

**Cost (in Rs.):** 128500



**Specifications &Use:**

- REMI Orbital Shaking Incubators are designed for precise temperature control and simultaneous shaking applications required in fermentations studies, enzyme reactions, life sciences, tissue culture and biotechnology, research labs.

**Name of Instrument and Make:** ELISA Reader/Biotek USA

**Cost (in Rs.):** 2,25,000



### **Specifications &Use:**

- Absorbance microplate reader
- Orbital shaking
- low volume nucleic acid and protein quantification

**Name of Instrument and Make:** PCR Thermal Cycler/Genie

**Cost (in Rs.):** 2,74,800



### **Specifications &Use:**

- The Thermal Cycler (also known as a Thermocycler, PCR Machine or DNA Amplifier) is a laboratory apparatus used to amplify segments of DNA via the Polymerase Chain Reaction (PCR). The device has a thermal block with holes where tubes holding the PCR reaction mixtures can be inserted. The cycler then raises and lowers the temperature of the block in discrete, pre-programmed steps.
- It is an important instrument which is needed in all the labs working in the field of gene cloning.

**Name of Instrument and Make:** Fermenter, pH control module, DO<sub>2</sub>, Water chiller, antifoaming with 10 L tank/Andel

**Cost (in Rs.):** 5,49,600



**Specifications &Use:**

- The main function of a fermenter is to provide a controlled environment (controlling temperature, pH, agitation and aeration) for growth of a microorganism, or a defined mixture of microorganism, to obtain a desired product

**Name of Instrument and Make:** CO<sub>2</sub> Incubator Model NU5100E/Nuair

**Cost (in Rs.):** 3,95,025



### **Specifications &Use:**

- CO2 Incubator provide a stable in-vitro growth environment by heating the growth chamber providing optimum temperature for growth of mammalian cells.
- It has optimum CO2 level display along with humidity, attached with CO2 gas cylinder

**Name of Instrument and Make:** Gel Documentation system/Genei

**Cost (in Rs.):** 5,15,250



### **Specifications &Use:**

- Gel documentation (gel doc) or gel imaging systems are used for the analysis of proteins, antibodies and nucleic acid immobilized in polyacrylamide or agarose gels, membranes or microarrays.

**Name of Instrument and Make:** Inverted Microscope /Olympus

**Cost (in Rs.):** 4,86,784



**Specifications &Use:**

- Inverted research microscopes use magnification for precise cell viewing and analysis. An inverted microscope uses a fixed stage with an objective lens for magnification that can be moved along a vertical axis to adjust the focus of a specimen or to allow the specimen to be brought closer or moved further away.

**Name of Instrument and Make:** Digital Colony Counter

**Cost (in Rs.):** Rs 4410



**Specifications &Use:**

- Digital Colony Counter is designed for quick and accurate counting of bacterial and mould colonies in petri dishes.

**Name of Instrument and Make:** Incubator /NWS-151

**Cost (in Rs.):** 63206



### Specifications &Use:

- Incubator is used to grow and maintain microbial cultures.
- It is an insulated enclosure in which temperature can be regulated at levels optimal for growth and division.

**Name of Instrument and Make:** Photoelectrical Colorimeter 112 /Systronics

**Cost (in Rs.):** Rs. 8185



### Specifications &Use:

- Photoelectric colorimeter is commonly employed for measurement of different substances like proteins, saccharides, etc. by measuring the transmittance and absorbance of light passing through a liquid sample

**Name of Instrument and Make:** Refrigerator /Samsung

**Cost (in Rs.):** Rs. 20400



**Specifications &Use:**

- Refrigerator is used to store thermo-labile substances such as media, enzymes, and hormones.
- It is also used for the short-term preservation of microbial cultures.

**Name of Instrument and Make:** Quick Freezer /REMI

**Cost (in Rs.):** Rs. 56,700



**Specifications &Use:**

- Quick freezers are designed for quick freezing and storing of biological specimens, glycerol stocks related to plant tissue culture and microbial biotechnology.

**Name of Instrument and Make:** UV Transilluminator /GeNei

**Cost (in Rs.):** Rs. 22150



**Specifications & Use:**

- Ultra-Violet (UV) transilluminator is a standard piece of equipment used in life science laboratories for visualization of target DNAs and proteins.
- The UV transilluminator works by emitting high levels of UV radiation through the viewing surface.

**Name of Instrument and Make:** Microwave Oven /LG

**Cost (in Rs.):** Rs. 11850



**Specifications & Use:**

- Microwave ovens can be used in laboratories for the rapid heating of material – either to dry them completely or to subject a workpiece to sudden thermal stress.

**Name of Instrument and Make:** Hot Air Oven /NSW-143

**Cost (in Rs.):** Rs. 63206



### **Specifications & Use:**

- Hot air ovens are electrical devices which use dry heat to sterilize. Generally, they use a thermostat to control the temperature.

**Name of Instrument and Make:** Serological Water Bath /NSW

**Cost (in Rs.):** Rs. 10,004



### Specifications & Use:

- Serological water bath or thermostatic water bath, is a container filled with heated water that is used to incubate samples at a constant temperature for long periods.

**Name of Instrument and Make:** Digital Weighing Balance

**Cost (in Rs.):** Rs 74,309



### Specifications & Use:

- Digital weighing balance is used to accurately determine the mass or weight of an item or substance within a specific weight range and to a particular readability.

- They are typically used to measure the weight of smaller amounts of substances in grams, milligrams, or micrograms.

**Name of Instrument and Make:** Cyclo Mixer CM101 /REMI

**Cost (in Rs.):** Rs. 3000



**Specifications &Use:**

- Cyclo mixer is suitable for a wide range of process applications, including mixing of liquids, cohesive powders, slurries, automatically.
- It has speed regulation system through knob provided on the control panel.

**Name of Instrument and Make:** Weighing Machine /ASK

**Cost (in Rs.):** Rs. 4500



### Specifications & Use:

- Weighing machine has applications in weighing test materials and sampling amounts, formulations.

**Name of Instrument and Make:** Micro centrifuge R-8C/REMI

**Cost (in Rs.):** Rs. 12039

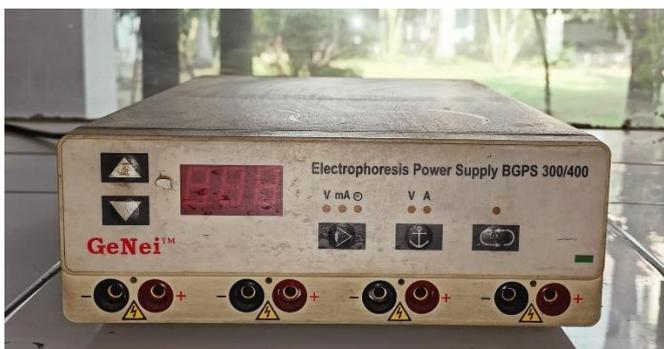


### Specifications & Use:

- A microcentrifuge, also called a microfuge, is used to spin small (2 ml or less) liquid samples at high speeds (generally tens of thousands of times g-force).
- It is routinely used in many aspects of molecular biology, including isolation of nucleic acids and proteins, extraction of blood components, etc.

**Name of Instrument and Make:** Electrophoresis Power Supply BGPS 300/400 /GeNe i

**Cost (in Rs.):** Rs. 13600

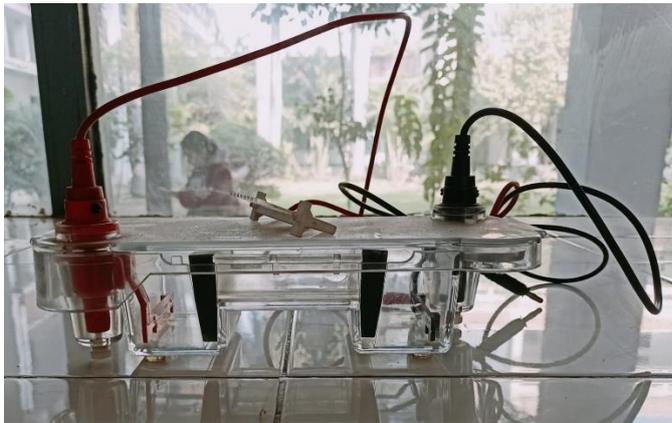


### **Specifications &Use:**

- Power supplies for electrophoresis are used to create the electrical current to power DNA/RNA separations, PAGE electrophoresis and transferring to membrane.
- The voltage determines the scope of function with 300V strong enough for running gels while 250V is needed to perform transfers.

**Name of Instrument and Make:** Mini Submarine Electrophoresis System -CODE 7020 and 7030

**Cost (in Rs.):** Rs. 93676

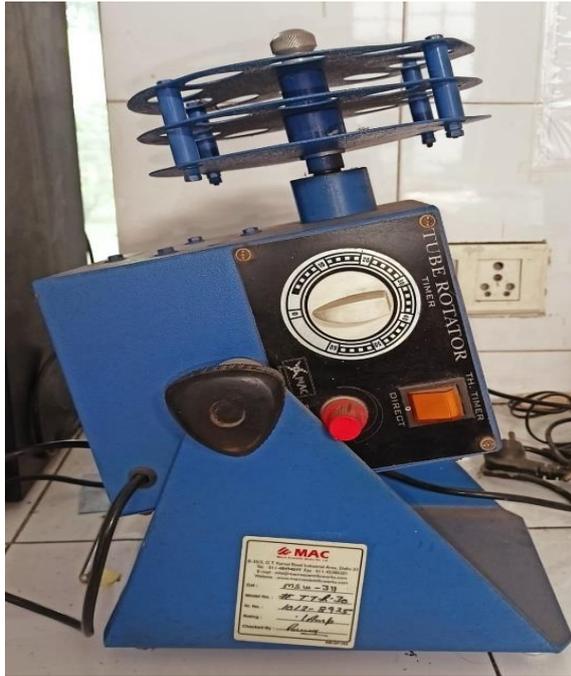


### **Specifications &Use:**

- Mini submarine electrophoresis system is used for separations of DNA, RNA fragments in agarose gels.
- The system includes buffer chamber, safety lid with cables and electrodes that are connected to the power supply to run the electrophoresis.

**Name of Instrument and Make:** Tube Rotator TTR-30/MAC

**Cost (in Rs.):** Rs. 40,000



### Specifications &Use:

- Tube rotator is used in mixing samples for applications used in clinical testing, biochemistry, and molecular biology.
- Rotators are used with sample tubes that are rotated, rocked, and tumbled to mix samples vertically and horizontally.
- The rotator can be adjusted to meet the needs of the application.

**Name of Instrument and Make:** Magnetic Stirrer /REMI

**Cost (in Rs.):** Rs. 2956



### Specifications &Use:

- Magnetic stirrer consists of a rotating magnet or a stationary electromagnet that creates a rotating magnetic field.
- This device is used to make a stir bar, immerse in a liquid, quickly spin, or stirring or mixing a solution.

**Name of Instrument and Make:** Microscope /OPTIKINDIA

**Cost (in Rs.):** Rs. 1911



**Specifications &Use:**

- Microscope is used to magnify small objects that produces enlarged images of small objects, allowing the observer an exceedingly close view of minute structures such as cells
- Its applications include, observation of cell division phases, chromosomes, identification of microorganisms.

**Name of Instrument and Make:** Orbital Shaker OS-20/BIOSAN

**Cost (in Rs.):** Rs. 5566



### Specifications & Use:

- Orbital shakers work by generating a horizontal circular shaking motion at low to high speed enough for mixing liquids in flasks or tubes.
- It is an ideal for a variety of general-purpose shaking applications in cell culture, bacterial growth and suspension, staining and washing procedures.
- This type has a circular shaking motion with low to high speed with less vibrations, ideal for culturing microbes.

**Name of Instrument and Make:** Distillation Unit

**Cost (in Rs.):** Rs. 17000



### Specifications & Use:

- Distillation unit is used for the purification of water. Distilled water can reduce the chances of contamination.

- Different components boil at different temperatures, when a mixture is heated, the substance with lower boiling point starts to boil first and convert into vapours which can be then collected separately.

**Name of Instrument and Make:** BOD Incubators /NSW-152

**Cost (in Rs.):** Rs.71959



#### **Specifications & Use:**

- These incubators are also called low temperature incubators. The BOD incubator provides the required temperature for the growth of microorganisms and allows to perform the BOD testing.

**Name of Instrument and Make:** Laboratory Stirrer /REMI

**Cost (in Rs.):** Rs. 15,000



### **Specifications &Use:**

- A laboratory stirrer is used to mix or disperse fluids in a container.
- It consists of several components: an electric motor with a stirring shaft and a base that holds the motor and the stirring impeller.
- The impeller rotates at high speeds to create fluid motion and help homogenize the liquid.

**Name of Instrument and Make:** Rotary Shaker /REMI

**Cost (in Rs.):** Rs. 68,000



### **Specifications & Use:**

- These shakers are ideal for mixing and development of cultures, chemicals, solvents, and assays etc.

- In microbiological and cell culture, it is used for gentle mixing of fluids in test tubes and glass vessels of different capacities.

**Name of Instrument and Make:** PTC Racks

**Cost (in Rs.):** Rs. 17800



**Specifications and Use:**

- It is used for micropropagation using meristem and shoot culture to produce large numbers of identical individuals and large-scale growth of plant cells in liquid culture as a source of secondary products.

**Name of Instrument and Make:** Vertical Mini Gel System /Genei

**Cost (in Rs.):** Rs. 7000



#### **Specifications & Use:**

- Vertical gels are mostly made of acrylamide. It is used to separate nucleic acids such as RNA and DNA.
- It is used in separating proteins. Anode and cathode are present at either ends of the electrophoretic chamber.
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**Name of Instrument and Make:** Digital pH Meter /Toshcon-Toshniwal Instruments CA11

**Cost (in Rs.):** Rs. 5100



### **Specifications & Use:**

- An electronic pH meter is used to obtain more accurate pH measurements.
- pH meter is an instrument used to measure hydrogen ion activity in solutions - in other words, this instrument measures acidity/alkalinity of a solution.

**Name of Instrument and Make:** Broun Scale Balance /Docbel Broun

**Cost (in Rs.):** Rs. 350



### **Specifications & Use:**

- Balance is used to accurately determine the mass or weight of an item or substance within a specific weight range and to a particular readability.
- It is typically used to measure the weight of smaller amounts of substances in grams, milligrams, or micrograms.

**Name of Instrument and Make:** Vacuum Mini Air Compressor

**Cost (in Rs.):** Rs. 6200



### **Specifications &Use:**

- It provides suction that drives the filtration or aspiration of suspended or liquid samples.
- It controls or induces solvent evaporation through the reduction of vapor pressure, like in concentrators, gel dryers, rotary evaporators, and ovens.

**Name of Instrument and Make:** Autoclave /Colton

**Cost (in Rs.):** Rs. 40697



**Specifications & Use:**

- An autoclave is a machine that uses steam under pressure to kill harmful bacteria, viruses, fungi, and spores on items that are placed inside a pressure vessel.
- The items are heated to an appropriate sterilization temperature for a given amount of time.