

**Criterion IV: Infrastructure and Learning Resources**

4.1.1 The Institution has adequate infrastructure and physical facilities for teaching – learning, viz., classrooms, laboratories, computing equipment, etc.

**M. Sc. Physical Chemistry Lab**



M Sc. Physical Chemistry laboratory aims at the physical chemistry practicals of Postgraduate pure chemistry and first year pharmaceutical chemistry students. A part of physical chemistry lab is set aside as a computational lab where the computational experiments are conducted using dedicated software.



Time: 15-01-2021 11:07

Note: MSc physical and computational

### Air Hot oven



A hot air oven is a laboratory instrument that uses dry heat to sterilize laboratory equipment and other materials. That equipment cannot be wet or material that will not melt, catch fire, or change form when exposed to high temperatures are sterilized by using the dry heat sterilization method. Hot air oven also known as forced air circulating oven.

Use:- in drying apparatus and chemicals.

## Vacuum Oven



Vacuum ovens are ideal for drying of all thermolabile substances, powders, and pastes. The vacuum oven is heated from side wall of chamber. Temperature varies up to 30<sup>0</sup> C from wall to door. You shall find uniform temperature zone (+/- 5<sup>0</sup> C) inside chamber before putting your sample in.

Use:- in drying compounds



shaker



Latitude: 9.939493  
Longitude: 76.295869  
Elevation: 11.68m  
Accuracy: 20.8m  
Time: 15-01-2021 11:10  
Note: MSc physical and computational 5

A shaker is a piece of laboratory equipment used to mix, blend, or agitate substances in a tube or flask by shaking them. It is mainly used in the fields of chemistry and biology. A shaker contains an oscillating board that is used to place the flasks, beakers, or test tubes.

Use:- in Physical Chemistry experiments

## Polarimeter



A polarimeter is a scientific instrument used to measure the angle of rotation caused by passing polarized light through an optically active substance. Some chemical substances are optically active, and polarized (uni-directional) light will rotate either to the left (counter-clockwise) or right (clockwise) when passed through these substances.

Use:- in Physical Chemistry experiments.

### U. V. Spectrometer



Latitude: 9.939496

Longitude: 76.295858

Elevation: 11.68m

Accuracy: 20.0m

Time: 15-01-2021 11:11

Note: MSc physical and computational Z

Ultraviolet–visible spectroscopy or ultraviolet–visible spectrophotometry (UV–Vis or UV/Vis) refers to absorption spectroscopy or reflectance spectroscopy in part of the ultraviolet and the full, adjacent visible spectral regions. This means it uses light in the visible and adjacent ranges.

Use : Physical and Organic chemistry experiments



## Infrared spectrometer



Infrared spectroscopy is the measurement of the interaction of infrared radiation with matter by absorption, emission, or reflection. It is used to study and identify chemical substances or functional groups in solid, liquid, or gaseous forms. The method or technique of infrared spectroscopy is conducted with an instrument called an infrared spectrometer which produces an infrared spectrum.



Latitude: 9.939505  
Longitude: 76.295846  
Elevation: 11.68m  
Accuracy: 28.1m  
Time: 15-01-2021 11:13  
Note: MSc physical and computational 9

### Freezer



Latitude: 9.939676  
Longitude: 76.295661  
Elevation: 11.38m  
Accuracy: 92.9m  
Time: 15-01-2021 11:13  
Note: MSc physical and computational 10

A freezer is a large container like a fridge in which the temperature is kept below freezing point so that you can store food inside it for long periods.

### Hot air oven



A hot air oven is a laboratory instrument that uses dry heat to sterilize laboratory equipment and other materials. That equipment cannot be wet or material that will not melt, catch fire, or change form when exposed to high temperatures are sterilized by using the dry heat sterilization method. Hot air oven also known as forced air circulating oven.

Use:- in drying apparatus and chemicals

Auto clamp



An autoclave is a machine used to carry out industrial and scientific processes requiring elevated temperature and pressure in relation to ambient pressure / temperature. Autoclaves are used in medical applications to perform sterilization and in the chemical industry to cure coatings and vulcanize rubber and for hydrothermal synthesis.

Use:- In preparation of Nano materials.

Muffle furnace



A muffle furnace or muffle oven is a furnace in which the subject material is isolated from the fuel and all of the products of combustion, including gases and flying ash. After the development of high-temperature heating elements and widespread electrification in developed countries, new muffle furnaces quickly moved to electric designs.

Use:- in high temperature heating.

### HeatingMantle



A heating mantle, or isomantle, is a piece of laboratory equipment used to apply heat to containers, as an alternative to other forms of heated bath.

Uses:- in Heating