Major Instruments in Lab No. 8 of Botany Department

Name of Instruments	Brief Description of Instruments	Image of Instruments
Lab No. 8		
AAS (Atomic Absorption Spectrophotometer) (Installed in AAS Chamber)	It is a widely used analytical technique that measures the concentrations of specific elements in a sample by analyzing the absorption of light at characteristic wavelengths. The technique is based on the principle that free atoms can absorb electromagnetic radiation at specific wavelengths unique to each element. In AAS, the sample is atomized using a flame or graphite furnace. A hollow cathode lamp containing the element of interest emits light at wavelengths characteristic of that element. As this light passes through the atomized sample, some of it is absorbed by the free atoms, and the degree of absorption is proportional to the concentration of the element in the sample. AAS mainly applied in field of Environmental monitoring (analyzing heavy metals in water, soil, and air samples), Food and beverage industry (determining mineral content and detecting contaminants), Clinical laboratories (measuring essential and toxic elements in biological samples), Agriculture (analyzing soil composition and monitoring fertilizer content) etc.	

BOD Incubator Shaker	A BOD (Biochemical Oxygen Demand) incubator shaker is a specialized laboratory instrument used primarily in environmental and wastewater analysis. It combines temperature-controlled incubation with orbital shaking capabilities. The device maintains a constant temperature of 20°C ± 1°C, which is the standard temperature for BOD testing. The shaking mechanism provides gentle but continuous orbital agitation, typically at 100-150 rpm, to ensure proper mixing and oxygen distribution in water samples during the 5-day BOD test period. These incubator shakers are essential in determining the amount of oxygen required by aerobic organisms to break down organic matter in water samples, which is a crucial parameter in assessing water quality and pollution levels.