

Vimala College (Autonomous)

Thrissur



PG Department of Zoology

**Standard Operating Procedure
For
BSc Zoology Practical**

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Centrifuge

Purchased item	Practical Core course title and code	Practical performed	SOP
Centrifuge	Core course practical III: VZO6BPL3-Biochemistry, Physiology and endocrinology	Cell fractionation using plant cell Isolation of bacteria from soil Qualitative analysis of Marine plankton Isolation of DNA Estimation of Amino acid content of fish	<p>Procedure</p> <p>Press the start/stop button and slowly increase the rpm to the desired speed using the dial</p> <p>Once a run is complete, make sure the rotor has completely stopped before opening the centrifuge lid by depressing the red stop/start button.</p> <p>Remove sample vials.</p> <p>Remember to return the rpm dial back to zero after finishing</p> <p>Precautions to be followed</p> <ol style="list-style-type: none"> 1. Proper handling of the instrument 2. Ensure level and stability Balance centrifuge tubes equally 3. Ensure use of rubber cushion for glass tubes 4. Bring speed Knob to off and increase the speed gradually. 5. Do not open the lid in between the centrifugation cycle <p>Record to be maintained</p> <p>Laboratory Manual containing the experiments that can be performed with the equipment</p> <p>Maintenance Record</p>

Sahli's Hemoglobinometer

Purchased item	Practical Core course title and code	Practical performed	SOP
Sahli's hemoglobinometer	Core course practical III: VZO6BPL3- Biochemistry, Physiology and endocrinology	Estimation of Hb in human blood	<p>Sahli's method, also called as acid hematin method is the visual comparator method for the estimation of hemoglobin.</p> <p>Sahli's hemoglobinometer It is a set of devices that includes a comparator, hemoglobin tube, hemoglobin pipette, and stirrer.</p> <p>Specimen:</p> <p>Capillary or venous blood. Venous blood should be anticoagulated with 1.5-1.8 mg EDTA per mL of blood and mixed immediately.</p> <p>Reagents:</p> <ol style="list-style-type: none"> 1. N/10 Hydrochloric acid (HCl): Mixing 36 grams HCl in distilled water to 1 liter gives 1 N HCl. Diluting it 10 times will give N/10 HCl. 2. Distilled water <hr/> <p>Procedure:</p> <p>Ensure that the hemoglobinometer tubes and pipette are clean and dry.</p> <p>Fill the hemoglobinometer tube with N/10 HCl up to its lowest mark i.e. 2 g% or 10% mark with the help of a dropper.</p> <p>Take blood up to mark in the Sahli's pipette (20 µl). Wipe the extra blood outside the pipette and deliver it to N/10 HCl in the hemoglobin tube.</p> <p>Mix and leave it for 10 minutes in order for a complete conversion of hemoglobin to hematin.</p> <p>Add distilled water drop by drop and stir till color matches with the standard glass of the comparator.</p> <p>Take the reading at lower meniscus, which directly gives the hemoglobin concentration in 100 ml of blood.</p> <p>Advantages:</p> <ol style="list-style-type: none"> 1. Easy to perform and convenient. 2. Not very time consuming. Can be performed within maximum 15 minutes. 3. Reagents and apparatus are cheap and easily available. Reagents are less harmful. 4. Can be used in mass surveys. Doesn't require electricity.

Double distillation Unit

Purchased item	Practical Core course title and code	Practical performed	SOP
Double distillation Unit	Core course practical III: VZO6BPL3- Biochemistry, Physiology and endocrinology	<p>Cell fractionation from plant cells</p> <p>Qualitative analysis of Marine plankton</p> <p>Isolation of DNA from plant cell</p> <p>Estimation of Amino acid content of fish</p> <p>Separation of amino acids, proteins</p>	<p>All sensitive biological experiments, analytical experiments require distilled water</p> <p>PROCEDURE</p> <p>Connect the water inlet pipe to the tap. 5.2 Switch on the main supply.</p> <p>Keep an empty clean water container below the water outlet pipe to collect the distilled water.</p> <p>Switch on the unit.</p> <p>Collect about 500 ml of distilled water initially in the tank and discard it. Then collect the required amount of distilled water by operating the unit.</p> <p>Analyse the distilled water every week and report. 5.7</p> <p>Cleaning of the unit</p> <p>Dismantle the unit with the help of maintenance person.</p> <p>Clean thoroughly the storage container.</p> <p>Put about 500 ml of dilute (5%) Hydrochloric Acid in the distillation unit.</p> <p>Keep the Hydrochloric Acid in the unit for about 12 hours.</p> <p>Wash away the acid with tap water very thoroughly. Start the unit and collect the water to about 2 Lit.</p> <p>Discard the collected water.</p> <p>Clean the unit every month.</p>