V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

An Autonomous Institution Affiliated to Madurai Kamaraj University
(Belonging to Virudhunagar Hindu Nadars)
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
VIRUDHUNAGAR - 626 001 (TAMILNADU)

DEPARTMENT OF BOTANY

STANDARD OPERATING PROCEDURE

EQUIPMENTS

सत्यमेव जयते
DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science & Technology
Government of India

Under

DBT STAR COLLEGE SCHEME

FOR STRENGTHENING UG SCIENCE DEPARTMENTS
No.HRD-11011/163/2020-HRD-DBT DT.24.08.2020

DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE AND TECHNOLOGY, MHRD,
NEW DELHI

2020 - 2021

STEREO TRINOCULAR MICROSCOPE ZOOM SZM – 105

STEREO TRINOCULAR MICROSCOPE ZOOM SZM – 105

OPERATING PROCEDURE

- This microscope is used to see a three dimensional view of the specimen.
- Plug the microscope power cord into electrical outlet.
- Adjust the movable reflected LED light on the bottom back side of the objective.
- Set the intensity transmitted LED light adjustment to the lowest setting using illumination control knob.
- Fully open the aperture diaphragm of the condenser by rotating the ring to the extreme right.
- Place the specimen and prepared slide on the working stage.
- Rotate the eyepiece into working position.
- Raise the stage by rotating the Coarse Adjustment Knob to its positive stop. Using the Fine Adjustment Knob, bring the specimen into sharp focus.
- Set the eye tubes correctly, focus on the specimen through the binocular Eyepiece.
- Rotate the objective magnification adjustment to enhance contrast and/or increase the depth of focus.
- Using the Adaptor, connect the computer with the microscope, The images can be captured and saved in the computer.

CLEANING AND MAINTENANCE

- The microscope and its surrounding area should be dust free.
- Whenever lack of contrast, cloudiness or poor definition is encountered, clean the lower magnification objectives and optical surfaces with a lint free cloth or lens tissue moistened (not wet) with methanol.
- Clean the front lens with a toothpick covered with a cotton tip wetted with methanol.
- Avoid excessive use of solvent for cleaning.
- Cover the microscope always with dust cover, whenever the microscope is not in use.
- Use Xylene to clean the lens surfaces.

STEREO BINOCULAR ZOOM BZM – 7000

STEREO BINOCULAR ZOOM BZM – 7000

OPERATING PROCEDURE

- This microscope is used to examine opaque specimens and 3-D view of the sample.
- Plug the microscope power cord into electrical out let.
- Adjust the movable reflected LED light on the bottom back side of the objective.
- Set the intensity transmitted LED light adjustment to the lowest setting using illumination control knob.
- Fully open the aperture diaphragm of the condenser by rotating the ring to the extreme right.
- Place the specimen and prepared slide on the working stage.
- Rotate the eyepiece into working position.
- Raise the stage by rotating the Coarse Adjustment Knob. Using the Fine Adjustment Knob, bring the specimen into sharp focus.
- Set the eye tubes correctly, focus on the specimen through the binocular eyepiece.
- Rotate the objective magnification adjustment to enhance contrast and/or increase the depth of focus

CLEANING AND MAINTENANCE

- Whenever lack of contrast, cloudiness or poor definition is encountered, clean the lower magnification objectives and optical surfaces with a lint free cloth or lens tissue moistened (not wet) with methanol.
- Clean the front lens using a toothpick covered with a cotton tip wetted with methanol.
- Avoid excessive use of solvent for cleaning.
- Cover the microscope always with dust free cover, whenever the microscope is not in use.
- Use Xylene to clean the lens surfaces

BINOCULAR

BINOCULAR

OPERATING PROCEDURE

- Binocular is used to magnify the distant objects nearby
- Binocular consists of a two-barrel chamber, eyepiece lenses, objective lenses, prisms, diopter knob, and focusing wheel.
- The objective lens collects the light from the objects, the eyepiece presents the magnified object to the eye and prisms re-invert the flipped images and lengthen the light.
- A pair of binocula light enters a lens, called an objective lens, in each side.
- The objective lenses turn the image being viewed upside down.
- Then the light passes through the prisms. The prisms turn the image right side up and reflect it toward eyepieces.
- Look at an object through the left eyepiece with your left eye. Rotate the focusing ring until you see a sharp image of it.
- Look at the same object through the right eyepiece with your right eye. Rotate the diopter adjustment ring (usually located on the right eyepiece) until you see a sharp image.
- Focus on an object by rotating the focusing ring. If the diopter has been adjusted, turn the focusing ring to focus whenever you change the object viewed.

CLEANING AND MAINTENANCE

- Clean the front lens with a toothpick covered with a cotton tip wetted with methanol.
- Avoid excessive use of solvent for cleaning.
- Cover the binocular always with dust free cover, whenever it is not in use.

CAMERA

CAMERA

OPERATING PROCEDURE

- Insert the battery
- Charge the battery before using it.
- Insert the card.
- Set the power switch to <ON>, then set the Mode Dial to <A> (Scene Intelligent Auto)
- All the necessary camera settings will be set automatically.
- Focus on the object
- Look through the viewfinder and aim the viewfinder center over the object.
- Press the shutter button halfway, and the camera will focus on the object.
- The built-in flash will be raised as necessary.
- Take the picture
- Press the shutter button completely to take the picture.
- Review the picture.
- The image just captured will be displayed for approx. 2 sec. on the LCD monitor.
- To display the image again, press the <> button
- Align the lens's white or red mount index with the camera's mount index of the same color to attach the lens.
- attempt to make each photo as clear, focused, and informative as possible. Check each photo after it has been taken to ensure its quality.

CLEANING AND MAINTENANCE

- Cover the camera always whenever it is not in use.
- Recharge the battery.
- Do not short-circuit, disassemble, or modify the battery.
- Do not apply heat or solder to the battery.
- Do not expose the battery to fire or water.
- Do not subject the battery to strong physical shock

TRINOCULAR MICROSCOPE LX500 WITH ADAPTOR

TRINOCULAR MICROSCOPE LX500 WITH ADAPTOR

OPERATING PROCEDURE

- Plug the microscope power cord in to electrical out let.
- Turn on the microscope by the illumination control knob on the bottom left side of the instrument.
- Set the intensity of light to the lowest setting using illumination control knob.
- Fully open the aperture diaphragm of the condenser by rotating the ring to the extreme right.
- Using the sub stage condenser focusing knob, raise the condenser to the top of its excursion. If the condenser travel is excessive, limit the travel with the thumbscrew under the sub stage until the top lens of it is just below the stage surface
- Place the specimen slide on the stage.
- Rotate the nose piece to move the objective piece into working position.
- Raise the stage by rotating the coarse adjustment knob to its positive stop. Using the fine adjustment knob, bring the specimen into sharp focus.
- Adjust the eye tubes for inter pupillary distance and eye difference. The left eyepiece tube is focusable to compensate for refractive differences of the eyes.
- Set the eye tubes correctly, focus on the specimen through the right eyepiece tube only. Use the fine adjustment knob while covering the left eyepiece or closing the left eye.
  Focus the specimen through the left eyepiece by turning the eye tube. Cover the right eyepiece while doing this and be sure to focus with the left eye tube only, without using the focusing knob.
- When changing to high power objectives, the positions of the aperture diaphragm must be reset. As magnification increases, the aperture diaphragm must be opened as required

CLEANING AND MAINTENANCE

- Whenever lack of contrast, cloudiness or poor definition is encountered, clean the lower magnification objectives and optical surfaces with a lint free cloth or lens tissue moistened (not wet) with methanol.
- Clean the front lens using a toothpick covered with a cotton tip wetted with methanol.
- Avoid excessive use of solvent for cleaning.
- Cover the microscope whenever the microscope is not in use.
- Use Xylene to clean the lens surfaces