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# Diploma in Pharmacy 1<sup>st</sup> Year

## Human Anatomy & Physiology

### Experiment

To determine the study of compound microscope

#### Aim:

To determine the study of compound microscope

#### Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Dr. Sharma Rahul Kumar ,  
“Practical Manual of Human Anatomy and Physiology” Published by Nirali  
Prakashan , Pg.No 1 - 3

#### Requirement :

The name of the book which has required for this experiment is ‘  
Human Anatomy and Physiology ‘

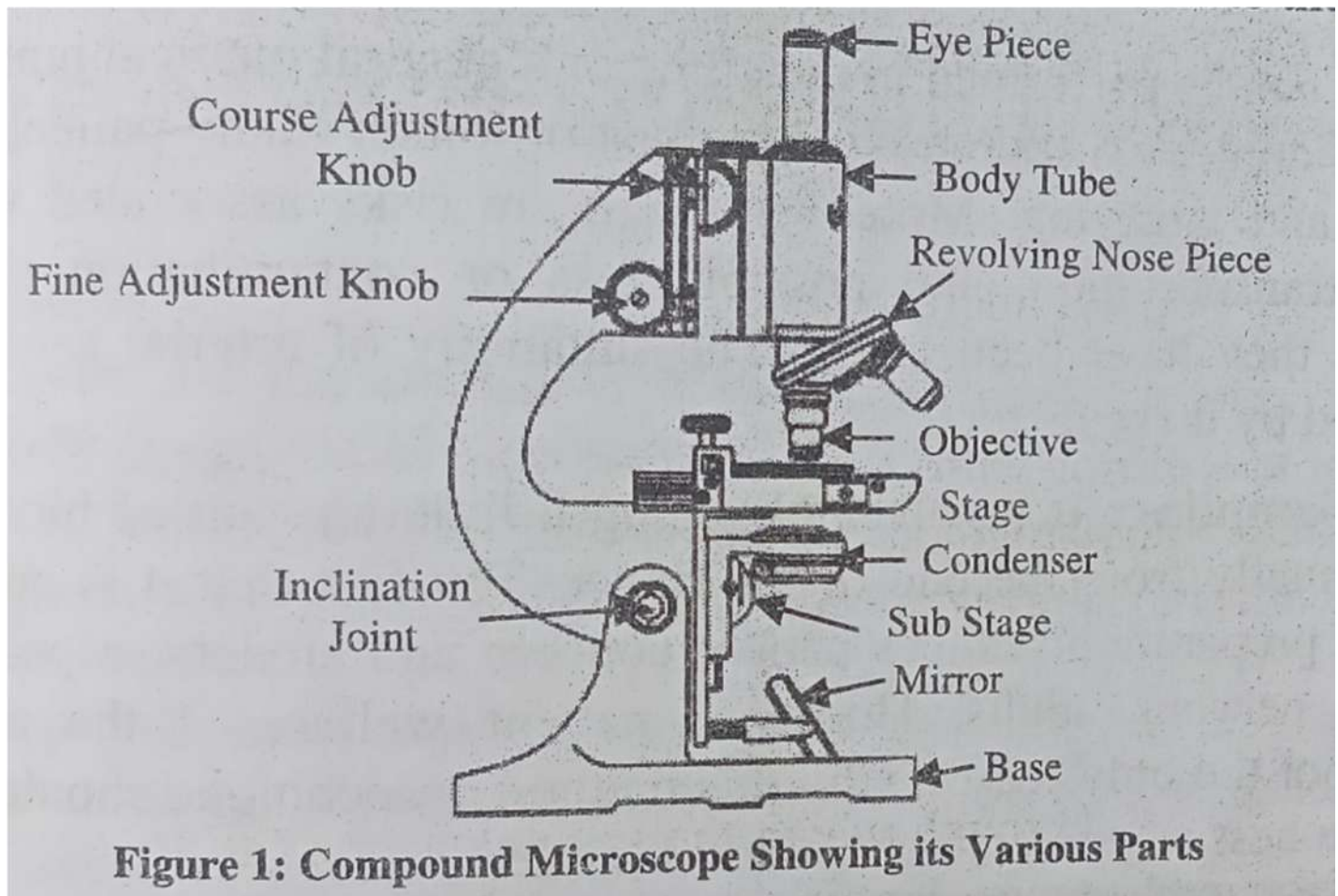
#### Parts discription

- ★ Coarse adjustment screw
- ★ Fine adjustment screw
- ★ Objective lens
- ★ Eye piece
- ★ Plane and concave mirror
- ★ Slide holder

#### Working

- place the microscope in an upright position at a convenient height for the operation on a rigid table make sure all the exposed optical surface are free of dirt

- Adjust the observation head to convenient working position
- Rotate the nose piece until the lowest power objective is in viewing position the lower the power of objective the greater the area of the specimen surface included in the field of view
- Lowest power objective also have a much greater depth of focus are generally used for initial focusing and viewing
- Take down the stage to a fairly low position with the help of coarse focus knob
- Make sure that the stage surface is free of dust or any other material that will interfere with the movement of the specimen slide and the stage between the slide fingers
- Position the specimen area of slide over the centre of the stage operative use the stage control knobs to move specimen slide to the desired position
- Looking through the observation head raise the stage by adjusting the coarse focus knob until an image appear focus as sharply as possible with coarse focus knob adjust the fine focus to sharply the image in the centre of field of view
- Focus as sharply as possible image the clarity of the image depends upon the size of aperture as the aperture becomes smaller the contrast the depth of focus increase but the resolving power decrease the image produced by combination of their three factors
- Examine the specimen when you find a feature you wish to observe at a higher magnification move the slide so that the feature gets center in the field of view use the fine focus knob to sharpen the image
- When using objective of higher numerical aperture proper focusing of the condenser is important focus the condenser by racking the condenser important movement knob up and down so that the field is evenly illumination



**Figure 1: Compound Microscope Showing its Various Parts**

### **Procedure for examining specimen using the oil immersion objective**

- Rotate the nose piece so that the lower power objective is in light path
- Place on drop of immersion oil on the lighted area of the specimen slide dust or air bubbles in the oil can destroy the image if the bubbles are trapped between the objective lens and the slide clear off the oil and start again
- Rotate the nose piece so that 100x oil immersion objective are in the light path
- With your eye at the level of the stage use course focus knob to raise the stage with the specimen cover glass when you see a flash of light at this location the objective lens has made contact with the immersion oil and microscope can be focused using the fine focus knob

- Each time you finish using the oil immersion objective wipe off all traces of oil from the objective and the specimen cover glass with a clean soft cloth
- Fine adjustment of binocular head
- Rotate the binocular Head to bring it to convenient position
- Adjust the interpupillary distance by bringing the eye piece closer or apart till you see one Fused image
- If the image from both oculars does not fuse you are required to do dioptic adjustment on the oculars as below
- Bring 10 X objective in position and focus the slide in the right with coarse and fine focus knob keeping the left eye closed
- Close the right eye and seeing through the left eye focus the left oculars up and down by rotating the focusing sleeve till image is in Sharp focus
- Look through both the eye it interpupillary adjustment required

### **Maintenance and precautions**

- ✓ Keep the machine neat and clean keep it covered when not in use
- ✓ Read the manual and understand the working before operating it
- ✓ Before beginning make sure all the parts are working properly
- ✓ Make sure that the stage surface is free of dust or any other material.

### **Result**

The Compound microscope was studied.