



Fig 1.1: The Compound Microscope Diagram

Practical - 1

Date: .../.../.....

Aim: To Study of compound microscope.

Reference:.....

Requirement:.....

Theory: Compound microscope is an instrument used for magnifying small objects, consisting of a lens of short focal length for forming an image that is further magnified by a second lens. Parts of a compound microscope-

A-Course adjuster- It is a knob that makes large adjustments to the focus.

B- Fine Adjuster-It is a knob that makes fine adjustments to the focus.

C. Carrying Arm-This attaches the eyepiece and body tube to the base.

D- Stage clips/moving clips- Metal clips that hold a slide securely onto the stage.

E-Inclination joint- The arm can swivel at this point.

F- Base- It is made up of hard metal. This supports the microscope. Its other name is horse shoe base.

G-Eye piece- The specimen kept on the stage can be viewed through eye piece. It contains two or more lenses. The most common magnification for the eyepiece is 10X. However, they can also be 2x, 5X and 15X. An eye piece is a removable part that can be interchanged with another eyepiece.

H- Body tube or barrel- It is the part of the microscope that holds the eyepiece.

I- Revolving nose piece- The rotating device that holds the objectives (lenses).

J- Low power objective lens- A lens with low magnification power (10X)

Body tube- It is the part of the microscope that holds the eyepiece.

Arm- The arm connects the body tube to the base. It is the part that a user holds to move the microscope from one place to another.

Base- As the name suggests, the base is the lowest portion on which the whole structure of the microscope rests. It is also called as horse shoe base and it is made up of hard metal.

Eye piece- The specimen kept on the stage can be viewed through eye piece. It contains two or more lenses. The most common magnification for the eyepiece is 10X. However, they can also an eye piece is a removable part that can be interchanged with another eyepiece.

Objective lenses- There are different types of objective lenses. These are the primary lenses of a compound microscope and can have magnification of 4x, 5x, 10x, 20x, 40x, 50x and 100x. The magnification values are written on the side of each lens. The objectives are attached to the nose piece that can be rotated with hand to get placed in the correct position.

Stage-It is the platform below the objective lens on which the object to be viewed is placed. There is a hole in the stage through which light beam passes and illuminates the specimen that is to be viewed.

Fig 1.2: Different parts of Compound Microscope Diagram

Stage clips-There are two stage clips one on each side of the stage. Once the slide containing the specimen is placed on the stage, the stage clips are used to hold the slide in place. Moving clips are fixed in some compound microscopes instead of stage clips.

Condenser- The condenser is a lens that condenses the received light from the illuminator (mirror).

Iris diaphragm-It is located on the lower surface of the stage. It is used to control the amount of light that reaches the specimen through the hole in the stage.

Illuminator (mirror) - Simple compound microscopes have a mirror that can be moved to adjust the amount of light that can be focused on the specimen. However, some advanced types of compound microscopes have their own light source.

Adjustments- Two adjustment knobs present in the microscope. the fine adjustment knob and the coarse adjustment knob that helps for the focusing of the lens. The coarse adjustment knob helps in improving the focus of the low powers whereas the fine adjustment knob helps in adjusting the focus of the lenses with higher magnification.

Instructions- 1. Carry the microscope by holding the arm with one hand and supporting the base with the other hand. Place the microscope flat on the table, keeping it away from the edge.

2. Cover the microscope with the dust cover after its use.

Report:.....
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Questions Bank

1. What are the types of microscopes?
2. What is a simple microscope?
3. What are the various types of compound microscopes?
4. What is the eye piece of microscope?
5. What is the Iris diaphragm of microscope?
6. Write the function of condenser in microscope.
7. Write the different types of objective lenses.
8. The magnifying power of the compound microscope is the product of the magnification of the objective lens and _____.
 - a. Eyepiece
 - b. Arm
 - c. Reflector
 - d. Body tube
9. _____ is the metallic platform that is fitted to the lower part of the arm with a hole in the centre.
 - a. Base
 - b. Drawer tube
 - c. Stage
 - d. Automatic Stop
10. What are the parts of a microscope?