Biology

Chapter 1

Microscopy

A microscope is an instrument used to see very small objects Like cells, objects which our eyes cannot see

Types of microscope

- **Light Microscope**
- **Electron Microscope**

Magnification and resolution

1. **Light Has a resolution of 0.25-3 micrometre**
2. **Electron microscope has a resolution of 0.001 micrometre**
3. **Electron microscopes has better resolution**
4. **Light microscope has a magnification power of 500x-1500x**
5. **Electron microscope has a magnification power of 100,000x**

Magnification formula+ Worked example:

Magnification= Image Size / Magnification

Real Size = Image Size/ Magnification

Q} A cheek cell is viewed under microscope with the magnification of 40x. The image of the cell is 2.4mm. Calculate its real width

Real size = image size/ magnification

Real size = 2.4mm / 40x

Real Size= 0.06mm

Parts of light microscope:

1. **Eyepiece: Lens to look through 10x to 15x**
2. **Nosepiece: Holds objectives and it rotates**
3. **Objective lens : 4x, 10x ,40x**
4. **Stage: Platform for slide**
5. **Diaphragm: Controls light**
6. **Coarse Focus: Rough Focusing**
7. **Fine Focus: Sharper Focusing**
8. **Base: Support**

Slide Preparation:

- **Add drop of water to slide**
- **Peel onion epidermis**
- **Place that onion on water drop**
- **Add iodine**
- **Lower Cover slip slowly**
- **Remove extra liquid with filter paper**

- **Place the slide on stage for observation**

Observe the slide:

- **Put slide on stage and clip it**
- **Start with lowest power objective**
- **Use course focus**
- **Use fine focus**
- **Switch to Higher power**