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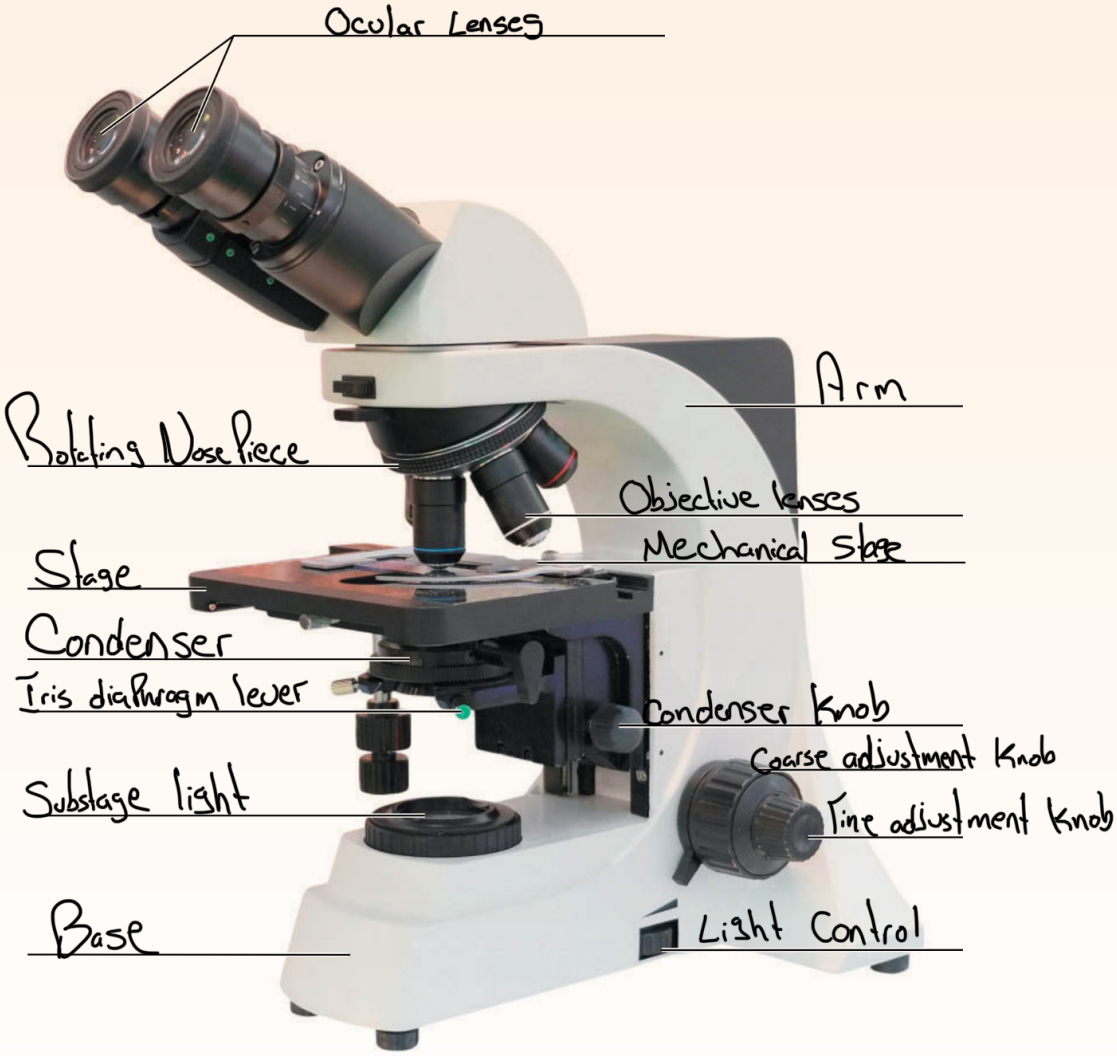
EXERCISE 3 REVIEW SHEET
The Microscope

Name Charlevagne W Clesca Lab Time/Date 4:13 Pm 02/23/2021

Care and Structure of the Compound Microscope

1. Label all indicated parts of the microscope.



2. Explain the proper technique for transporting the microscope.

When transporting the microscope you should hold it in an upright position with an arm surrounding it, and the other supporting the base.

3. Each of the following statements is either true or false. If true, write *T* on the answer blank. If false, correct the statement by writing on the blank the proper word or phrase to replace the one that is underlined.

Use special grit-free lens paper to clean the lense. 1. The microscope lens may be cleaned with any soft tissue.

Lowest Power objective 2. The microscope should be stored with the oil immersion lens in position over the stage.

T 3. When beginning to focus, use the scanning objective lens.

Fine adjustment 4. When focusing on high power, always use the coarse adjustment knob to focus.

T 5. A coverslip should always be used with wet mounts.

4. Match the microscope structures in column B with the statements in column A that identify or describe them.

Column A

i 1. platform on which the slide rests for viewing

d 2. used to adjust the amount of light passing through the specimen

e 3. controls the movement of the slide on the stage

b 4. delivers a concentrated beam of light to the specimen

c 5. used for precise focusing once initial focusing has been done

f 6. carries the objective lenses; rotates so that the different objective lenses can be brought into position over the specimena.

Column B

a. coarse adjustment knob
~~b. condenser~~
~~c. fine adjustment knob~~
~~d. iris diaphragm lever~~
~~e. mechanical stage~~
~~f. nosepiece~~
g. objective lenses
h. ocular lens
~~i. stage~~

5. Define the following terms.

total magnification: Objective magnification X Ocular magnification

resolution: Resolution or Resolving Power is the ability to discriminate two close object separately.

Viewing Objects Through the Microscope

6. Complete, or respond to, the following statements:

1. The distance from the bottom of the objective lens to the surface of the slide is called the Working distance

2. Assume there is an object on the left side of the field that you want to bring to the center (that is, toward the apparent right). In what direction would you move your slide? to the left.

3. The area of the slide seen when looking through the microscope is the field.

4. If a microscope has a 10× ocular lens and the total magnification is 950×, the objective lens in use at that time is 95 ×.

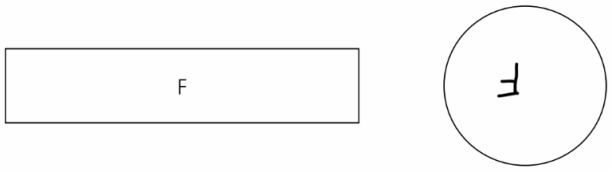
It increases the Contrast 5. Why should the light be dimmed when looking at living (nearly transparent) cells?

Parfocal 6. If, after focusing in low power, you need to use only the fine adjustment to focus the specimen at the higher powers, the microscope is said to be _____.

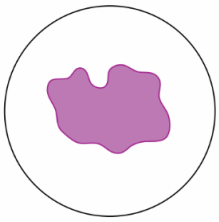
0.75mm 7. You are using a 10× ocular and a 15× objective, and the field diameter is 1.5 mm. The approximate field size with a 30× objective is _____ mm.

0.4 m 8. If the diameter of the low-power field is 1.5 mm, an object that occupies approximately a third of that field has an estimated diameter of _____ mm.

7. You have been asked to prepare a slide with the letter *F* on it (as shown below). In the circle below, draw the *F* as seen in the low-power field.



8. Estimate the length (longest dimension) of the object in µm:



Total magnification = 100×

Field diameter = 1.6 mm

Length of object = 1600 µm

9. Say you are observing an object in the low-power field. When you switch to high power, it is no longer in your field of view.

Why might this occur? If its in low Power there will be a wider field of view. If you have it in high Power it narrows the view and unfocus.

What should you do initially to prevent this from happening? Best you can do is center your subject exactly in the middle then slowly find your focus by adjusting your light

10. Do the following factors increase or decrease as one moves to higher magnifications with the microscope?

resolution: increase amount of light needed: increase

working distance: Decrease depth of field: Decrease

11. A student has the high-power lens in position and appears to be intently observing the specimen. The instructor, noting a working distance of about 1 cm, knows the student isn't actually seeing the specimen.

How so? its because the distance was shorter than 1Cm

12. Describe the proper procedure for preparing a wet mount.

you need to put the subject in the center of the slide then add drop water. If theres too much water remove with paper towel after slowly cover with a cover slip so you don't get bubbles.

13. Indicate the probable cause of the following situations during use of a microscope.

a. Only half of the field is illuminated: That is because the light was blocked

b. The visible field does not change as the mechanical stage is moved: the mechanical contact between the specimen with the objective lense

14. A blood smear is used to diagnose malaria. In patients with malaria, the protozoa can be found near and inside red blood cells. Explain why a microscope capable of high magnification and high resolution would be needed to diagnose malaria.

They will be able to see the cells structure and shape they will be able to see if there are any parasites around.

15. Histopathology is the use of microscopes to view tissues to diagnose and track the progression of diseases. Why are thin slices of tissue ideal for this procedure? our epithelial layer is kinda transparant or very light absorbant which makes it easier for the microscope.