

LABORATORY ACTIVITY NO. 4

TISSUE

Scope of Laboratory Activity

This laboratory activity consists of four (4) worksheets:

- Worksheet no. 1 Primary Tissues
- Worksheet no. 1.1 Epithelial Tissues
- Worksheet no. 1.2 Connective Tissues
- Worksheet no. 1.3 Muscle Tissues
- Worksheet no. 1.4 Nervous Tissues
- Worksheet no. 2 Microscopic Examination of the histologic section of tissues

Overview

As we continue our study of the human body, we progress from the cellular level of organization to the tissue level. In this laboratory activity, it will illustrate and explain four primary tissues in the human body. As well as differentiation of several subcategories on each type of tissues.

Objectives

After completing this worksheet, the student will be able to:

1. Identify the four primary tissues in the body and the subcategories.
2. Identify tissue subcategories through microscopic inspection of a prepared slide and through diagrams.
3. Describe the functions of the different tissue types
4. List specific areas in the body where the different tissue types can be found.

Materials Needed

1. Compound microscope
2. Histologic sections of tissues
3. Colored pencils

Worksheet no.1 Primary Tissues

1. Identify primary tissues.

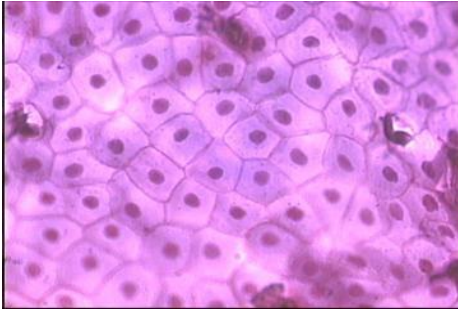


Figure 1. _____

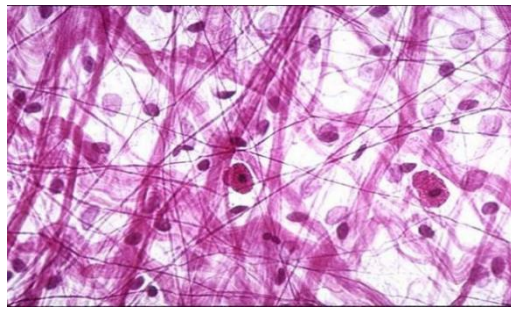


Figure 2. _____

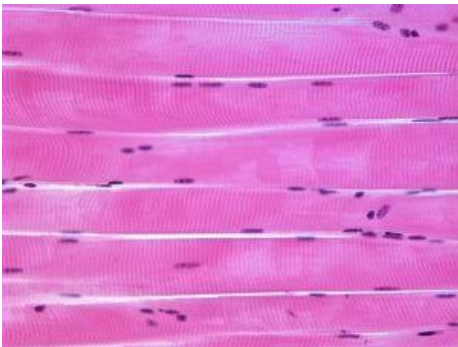


Figure 3. _____

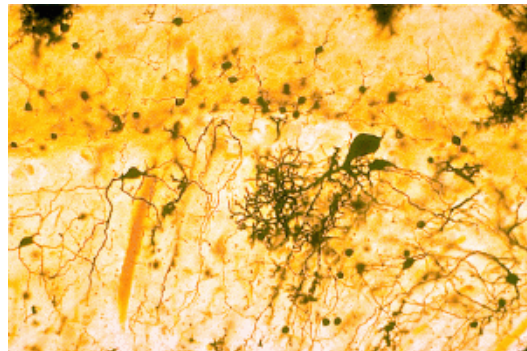


Figure 4. _____

Worksheet no.1.1 Epithelial Tissue

A. Matching type.

An epithelial tissue type could have more than one function.

- | | |
|-------------------|---|
| a. Absorption | e. Movement of substances over the epithelial surface |
| b. Diffusion | f. Protects underlying tissues in areas subjected to abrasion |
| c. Distensibility | g. Secretion |
| d. Filtration | |

- ____ 1. Stratified squamous epithelium lining the mouth.
____ 2. Simple squamous epithelium forming air sacs of the lung.
____ 3. Simple cuboidal epithelium forming kidney tubules.
____ 4. Ciliated pseudostratified epithelium lining the nasal cavities.
____ 5. Simple squamous epithelium forming mesothelium of serous membranes.

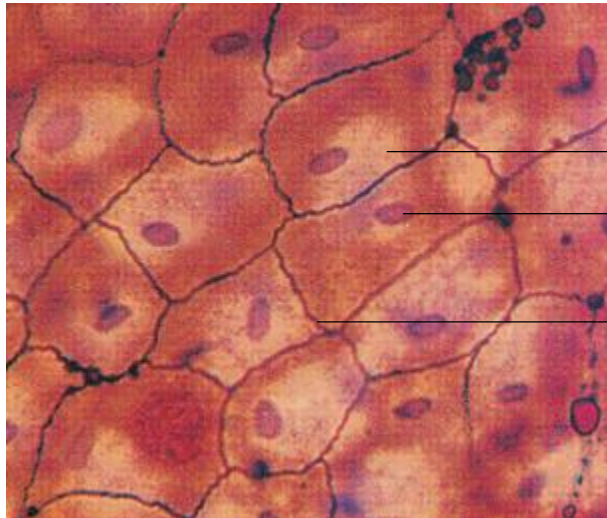
___ 6. Nonciliated simple columnar epithelium lining the stomach.

___ 7. Transitional epithelium lining the ureters.

B. Photomicrograph of the epithelial tissue.

1. Label the parts of the epithelial tissue.

2. Identify the types of epithelial tissue.



1 _____

2 _____

3 _____

Figure 4. _____

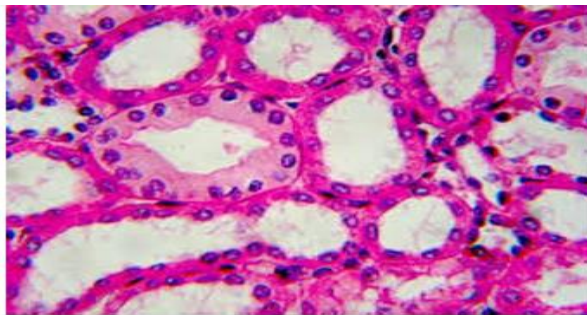


Figure 5. _____

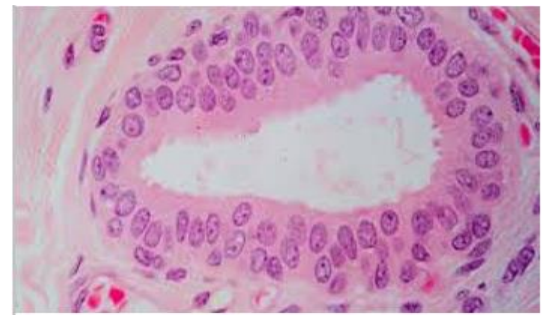


Figure 6. _____

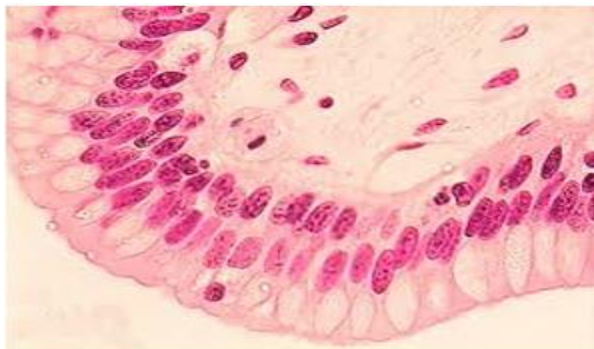


Figure 7. _____

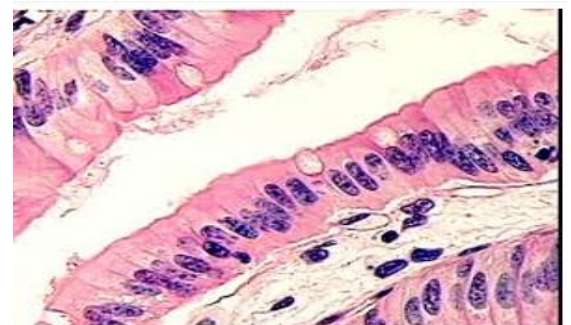


Figure 8. _____

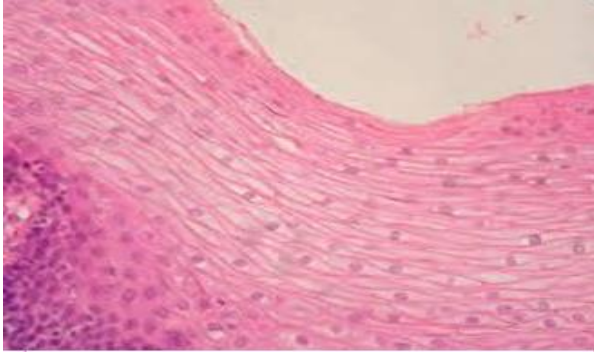


Figure 9. _____

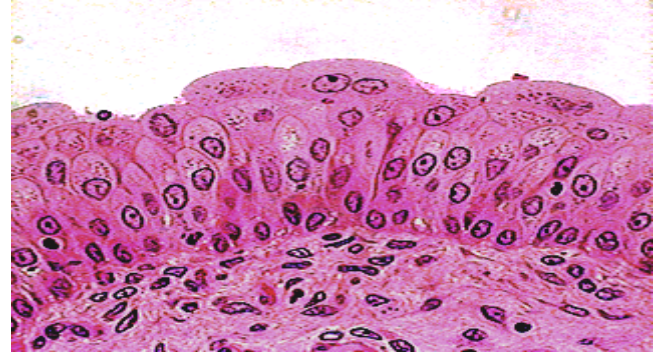


Figure 10. _____

Worksheet no.1.2 Connective Tissue

A. Identify the following connective tissue types. Insert the appropriate letter or corresponding terms in the answer blanks.

- A. Adipose connective tissue
 - B. Areolar connective tissue
 - C. Dense fibrous connective tissue
 - D. Osseous tissue
 - E. Reticular connective tissue
 - F. Hyaline cartilage
1. _____ provides great strength through parallel bundles of collagenic fibers: found in tendons.
 2. _____ acts as a storage depot of the skin.
 3. _____ composes the dermis of the skin.
 4. _____ forms the bony skeleton.
 5. _____ composes the basement membrane and packages organs; includes a gel-like with all categories of fibers and many cells types.
 6. _____ forms the embryonic skeleton and the surfaces of bones at the joints; reinforces the trachea,
 7. _____ provides insulation for the body.
 8. _____ structurally amorphous matrix, heavily invaded with fibers; appears glassy and smooth.

9. _____ contains cells arranged concentrically around a nutrient canal; matrix is hard due to calcium salts.
10. _____ forms the stroma or internal “skeleton” of lymph nodes, the spleen and other lymphoid organs.

B. Photomicrograph of the connective tissues.

1. Label the parts of the connective tissue
2. Identify the types of connective tissue

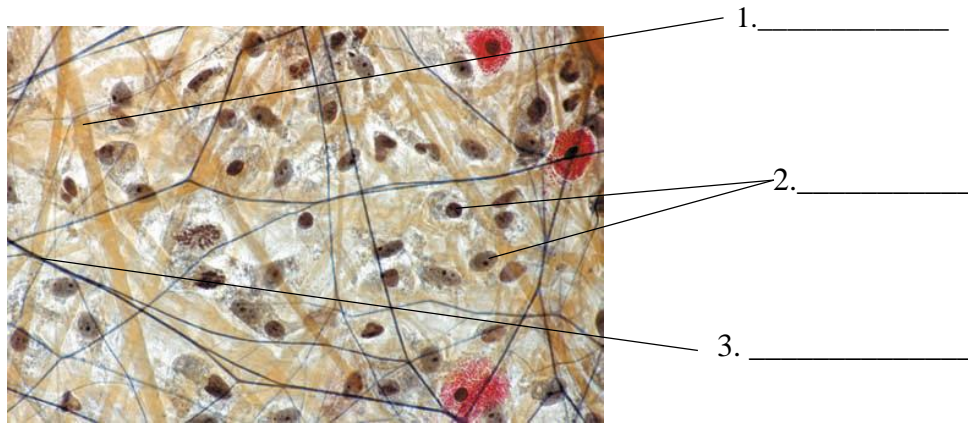


Figure 4. _____

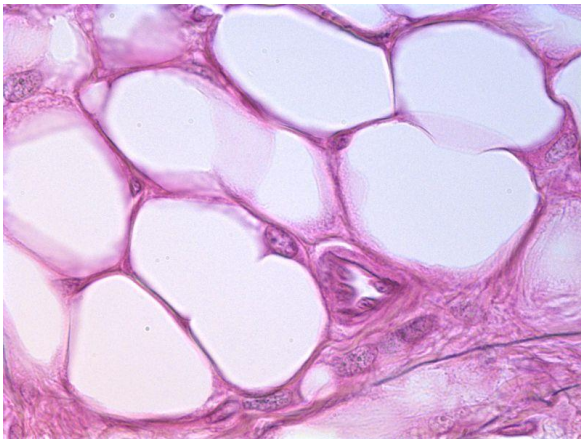


Figure 5. _____

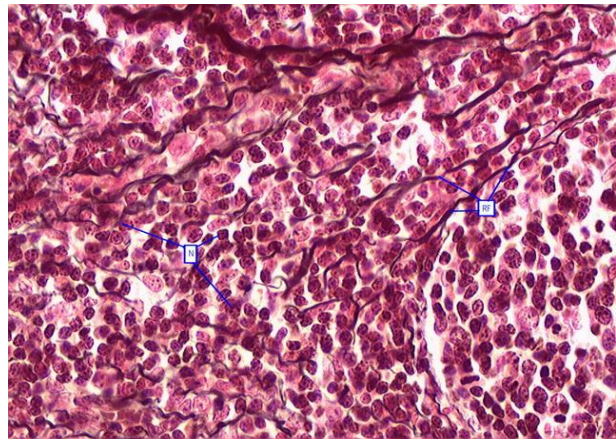


Figure 6. _____

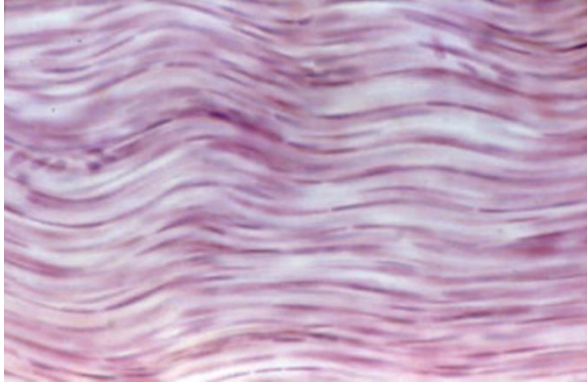


Figure 7. _____

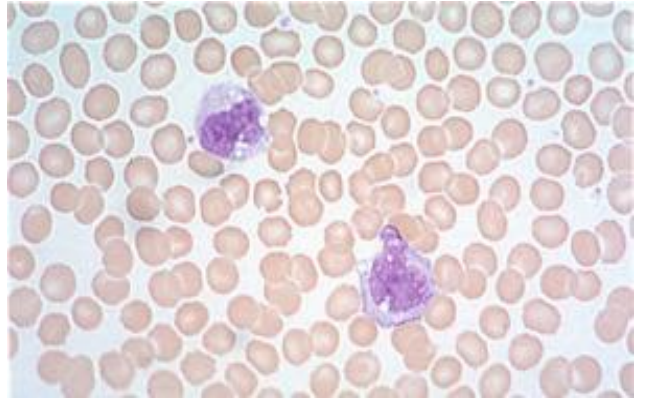


Figure 8. _____

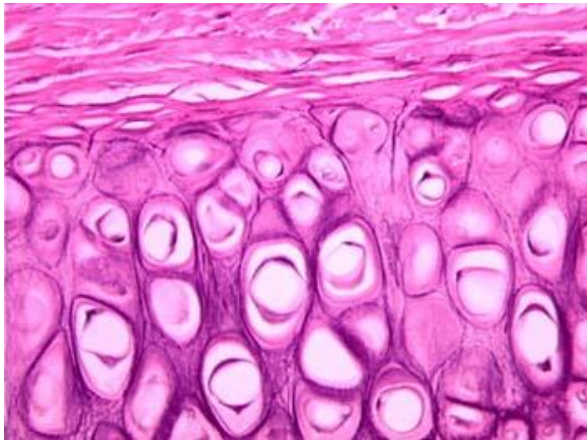


Figure 9. _____

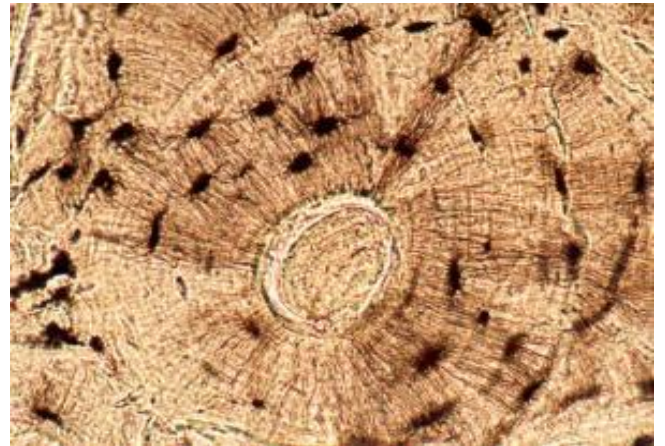


Figure 10. _____

Worksheet no. 1.3 Muscle Tissues

A. Three types of muscle tissue exhibit certain similarities and differences. Check (/) the appropriate spaces in the following table to indicate which muscle types exhibit each characteristics. (1 point each item)

Characteristics	Skeletal	Cardiac	Smooth
1. Voluntary controlled			
2. Involuntary controlled			
3. Banded appearance			
4. Single nucleus in each cell.			
5. Multinucleate			
6. Found attached to bones			
7. Allows you to direct your eyeballs.			
8. Found in the walls of stomach, uterus, and arteries.			
9. Contains spindle-shaped cells.			
10. Contains cylindrical cells with branching ends			
11. Contains long, nonbranching cylindrical cells			
12. Displays intercalated disks			
13. Concerned with locomotion of the body as a whole			
14. Changes the internal volume of an organ as it contracts.			
15. Tissue of the circulatory pump.			

B. Photomicrograph of the muscle tissues.

1. Label the parts of the muscle tissue.
2. Identify the types of muscle tissue

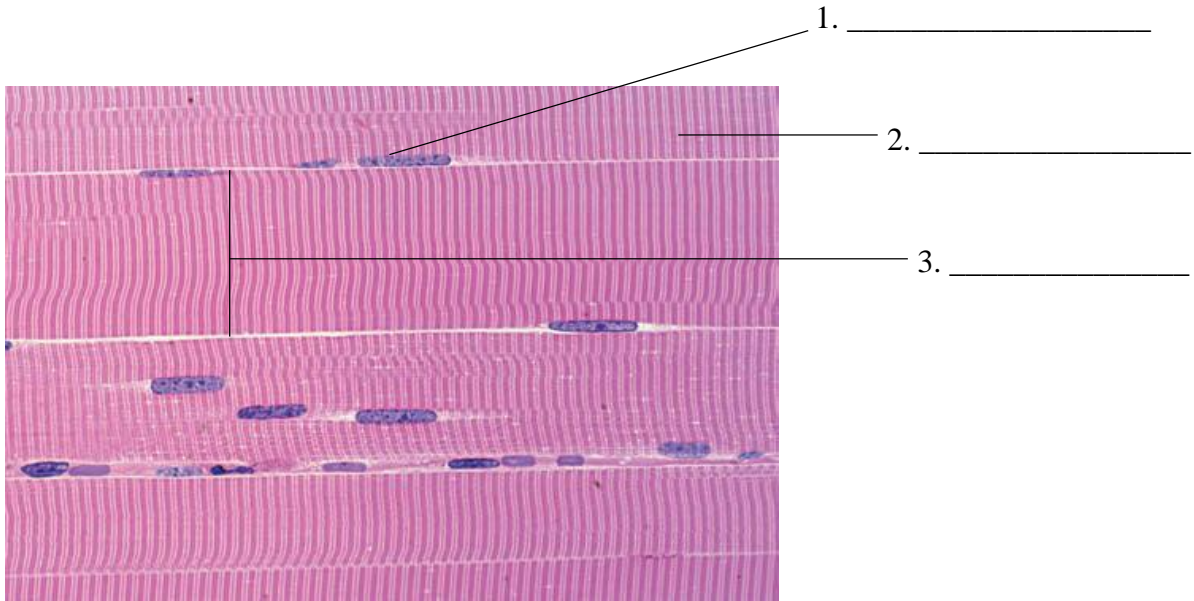


Figure 4. _____

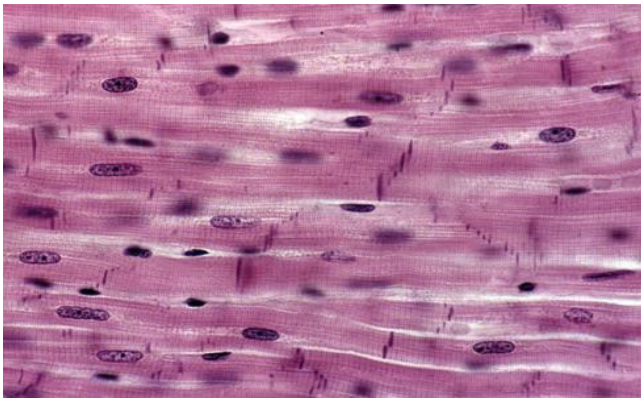


Figure 5. _____

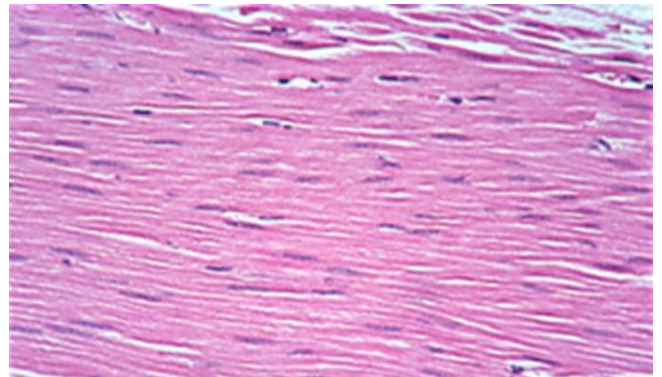
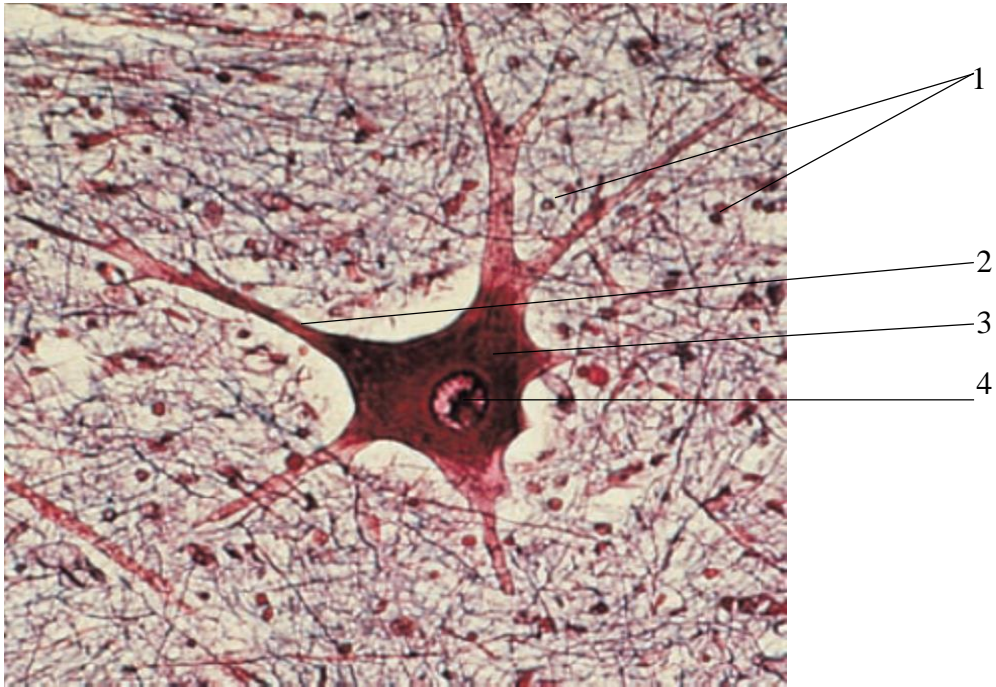


Figure 6. _____

Worksheet no. 1.4 Nervous Tissues

A. Photomicrograph of nervous tissue

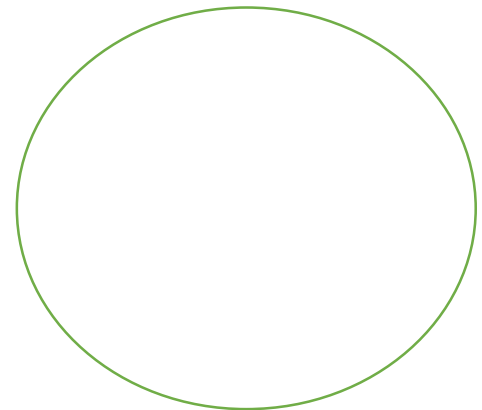
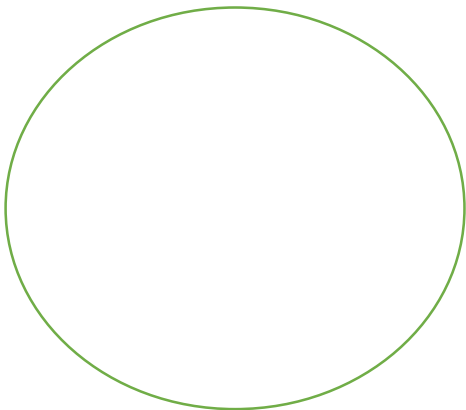
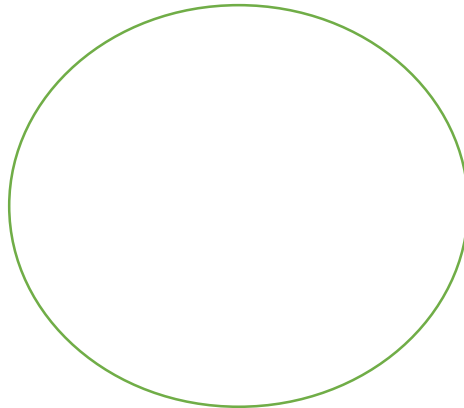
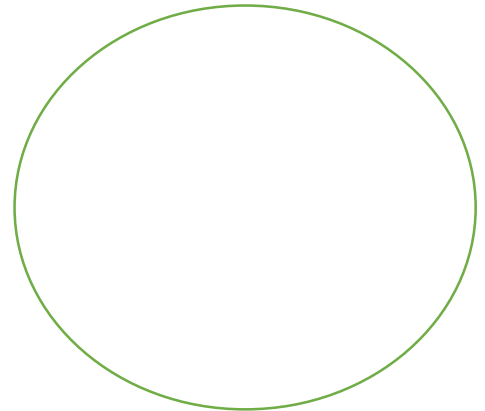
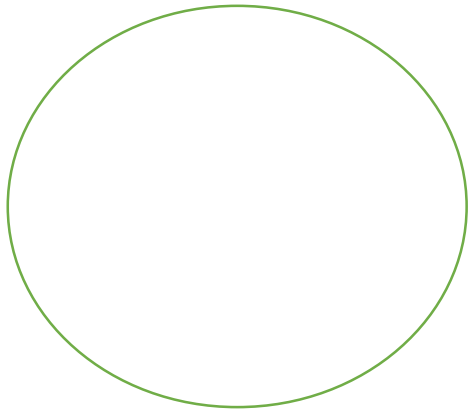
1. Label the parts of the nervous tissue



1. _____
2. _____
3. _____
4. _____

Worksheet no. 2 Microscopic Examination of the histologic section of tissues

1. Examine the prepared microscope slides of the different tissues.
2. Draw and color the tissues.
3. Identify the tissue.
4. 2 points each



YOU MAY NOW PROCEED TO THE NEXT LABORATORY ACTIVITY

