Integumentary system

Materials:

- Skin model
- Prepared skin slides
- Lens paper
- Compound light microscope
- Glass cleaner

Objectives

1. Review the functions of the integument.
2. Review the gross and microscopic anatomy of the integument including epidermis, dermis and associated structures.
3. Review the cellular components, structure and function of the skin layers
4. Identify the accessory structures of the integument including glands, hair and nails including location and function.

Procedures

Skin model:

1. Identify the layers and structures of the skin and underlying layer.
   a. Epidermis- stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, and stratum basale
   b. Dermis- papillary region, reticular region, hair, hair follicles, sebaceous and sudoriferous glands, piloerector (arrector pili) muscles, blood vessels, sensory receptors and dermal papillae.
   c. Hypodermis (subcutaneous layer)- adipose tissue and blood vessels.

Skin slides:

1. Obtain prepared slides of skin for study.
2. Observe the different slides at scanning power (4X); low magnification (10X); and high dry (40X)
3. Draw and label layers and structures in the lab assignment.

Hair and nail observation

1. Using a magnifying glass view your nails.
2. Pull a strand of hair from your head and place it on a slide. Cover it with a coverslip and view it under the microscope.

Name: _____

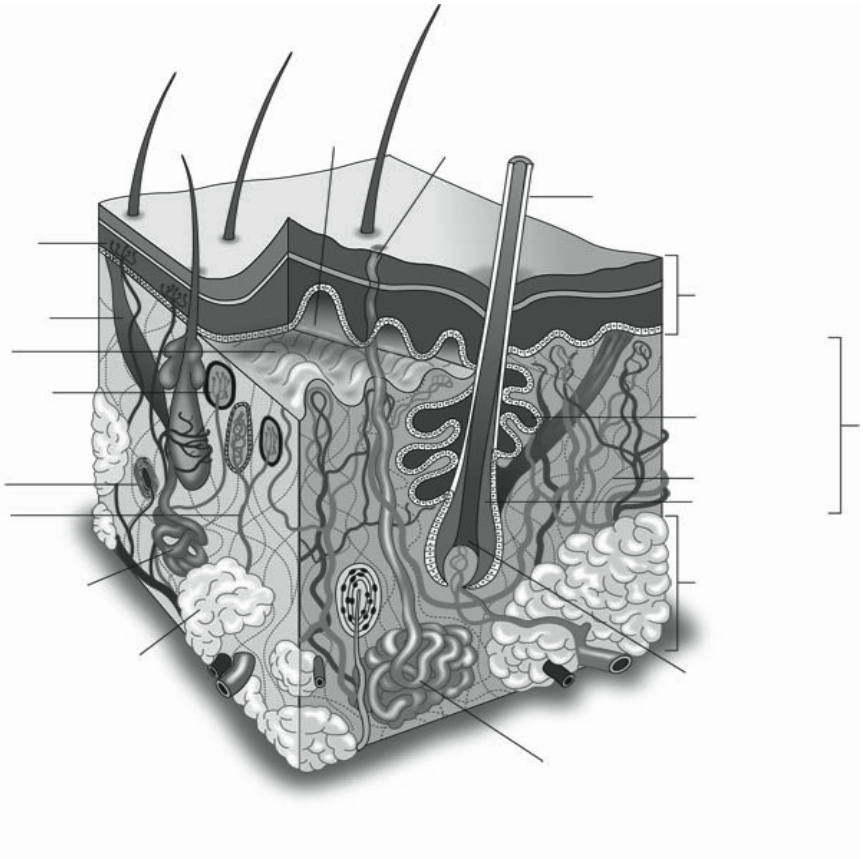
Date: _____

Laboratory Assignment
Integumentary system

1. List the primary functions of the integument:

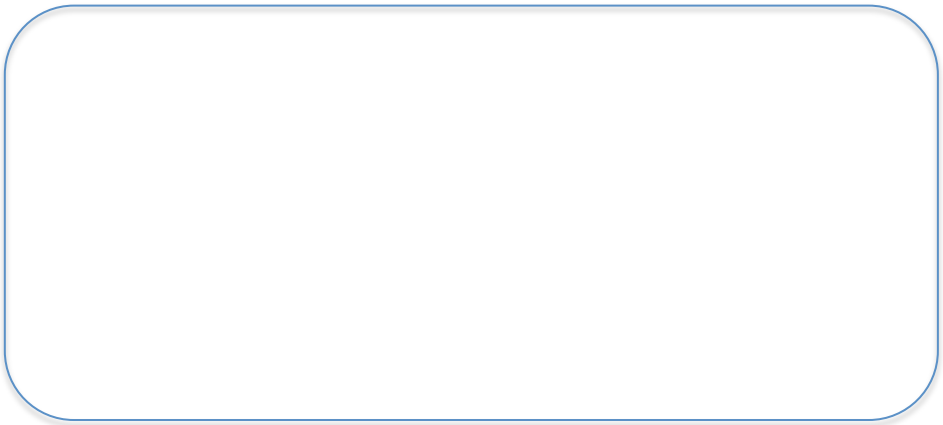
_____
_____
_____
_____
_____

2. Using your skin model, identify the following structures that are marked by leader lines in the following illustration of the integument and hypodermis:
adipose tissue, apocrine sweat gland, arrector pili muscle, corpuscle of touch(Meissner corpuscle), dermal papilla, dermis, eccrine sweat gland, epidermal ridge, epidermis, free nerve ending, hair follicle, hair root, hair shaft, lamellated (pacinian) corpuscle, reticular region, sebaceous gland, sensory nerve, subcutaneous layer (hypodermis), sweat pore.



3. List the cells that form the epidermis and describe their function:
a.
b.
c.
d.

4. Observe a slide of thick skin. Next draw the epidermal layer and label the following strata of the epidermis in the box below: stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, and stratum basale.



5. Match the structure or region with the correct description:

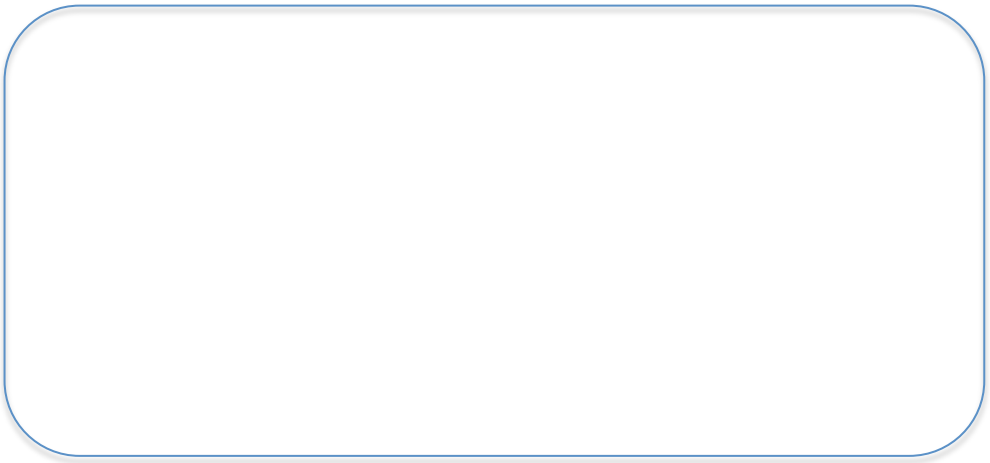
a. dermis	e. sudoriferous gland
b. epidermis	f. sebaceous gland
c. reticular region	g. hypodermis
d. papillary region	h. lamellated (pacinian) corpuscle

_____ superficial region of the dermis containing areolar connective tissue.
_____ a sweat gland.
_____ layer of adipose tissue and blood vessels below the skin.
_____ an oil gland.
_____ the superficial layer of the skin.
_____ the deeper region of the dermis containing the bulk of the structures associated with the dermis.
_____ the deep portion of the skin, just below the epidermis.
_____ specialized deep pressure and vibration receptor located deep in the dermis or hypodermis.

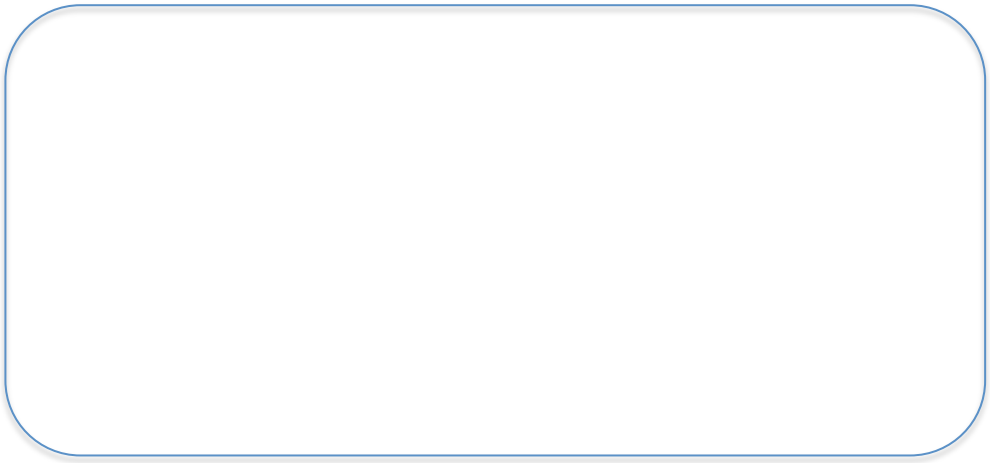
6. List the glands that are found in the dermis. What is their primary function?

_____
_____
_____

7. Using a dissecting microscope, view your fingernails. Draw and label the structures you are able to see.



8. Using your light microscope, view a skin slide and observe the sudoriferous and sebaceous glands. Draw and label the glands you observed.



9. What is the primary function of melanocytes?

_____
_____
_____

10. What structures found in the dermis help to regulate temperature?

_____
_____
_____

11. What are the two layers of the dermis? How do they differ?

_____
_____
_____

12. Identify the following structures that are marked by leader lines in the following illustration of hair: cortex, connective tissue sheath, internal root sheath, medulla, external root sheath, and cuticle.