**ANATOMY & PHYSIOLOGY: INTEGUMENTARY SYSTEM**

**OUTLINE FOR NOTES**

**HEALTH CARE CAREERS** **NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system consists of the skin and its accessory structures, including the hair, nails, sebaceous glands (relating to or producing a waxy yellowish body secretion sebum), and sweat glands.

2. The skin is the exterior covering of the body. It weighs more than 6 pounds in the average adult, and covers more than 3,000 square inches.

It is the largest \_\_\_\_\_\_\_\_\_\_\_\_\_ of the body. It is supplied with blood vessels and nerves.

3. Functions of skin:

1. The skin provides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It protects against invasion by

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other harmful agents. It protects delicate cells beneath

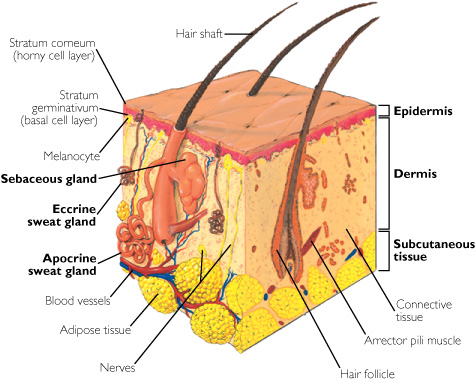
the surface from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. It inhibits excessive \_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. It produces a protective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to protect the body against excessive exposure from the sun.
3. It helps \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the body’s supply of Vitamin \_\_\_\_\_\_\_\_\_.
4. The skin regulates body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When the body is too cold, the skin’s blood vessels constrict. This allows more heat-carrying blood to circulate to the muscles and organs. When the body is too hot, the blood vessels in the skin dilate. That brings more blood to the surface for cooling by radiation. At the same time, sweat glands secrete more sweat that cools the body when it evaporates.
5. The skin provides \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It contains millions of nerve endings that act as sensory receptors for pain, heat, cold, and pressure. When stimulation occurs, nerve impulses are sent to the cerebral cortex of the brain… and the brain triggers any necessary response.

4. The skin has two layers… the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. The epidermis actually has 4 străta…

1. The stratum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (STRĂT um KOR nee um) is the outermost strata of the epidermis. It is mostly dead cells, filled with a protein substance called keratin. It is thicker on the soles of the feet than on the eyelids…where there is less pressure.
2. The stratum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (LOO seh dum) is a translucent layer lying directly beneath the corneum. It may not even exist in thinner skin. Cells in this layer are also dead or are in the process of dying.
3. The stratum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (grăn yū LŌ sum) is one or more layers of cells starting to die and become hard. They are in the process of keratinization… (kare ah tin i ZA shun) becoming fibrous protein similar to that in hair and nails.
4. The stratum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (jer mah nah TĪV um) is composed of several layers of living cells capable of cell division. It is the innermost layer of the epidermis, and contains melanin… the pigment that gives color to the skin. The more abundant the melanin… the darker the skin color. Damage to this layer, such as in severe burns, requires skin grafts.

 6. The dermis is beneath the epidermis and is

composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tissue. It contains the lymphatics, nerves, nerve endings, blood vessels, sebaceous and sweat glands, elastic fibers, and hair follicles.

7. The dermis is divided into two layers…

A.the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer (PĂP ah lair ee) is arranged into microscopic structures that form ridges. These are the finger- and footprints.

B. the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

layer (ruh TĬK yoo ler) is beneath the papillary

layer; it is a white fibrous tissue that supports

the blood vessels.

8. The dermis is connected to underlying tissue by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tissue. The subcutaneous tissue or hypodermis is composed of adipose and connective tissue.

It \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the skin.

9. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a threadlike structure formed by a group of cells that develop within a

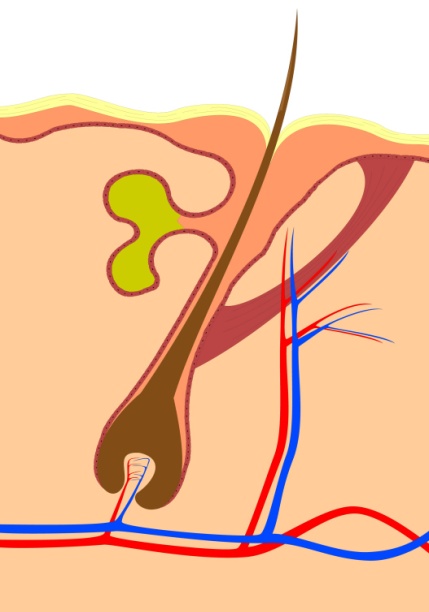
hair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or socket. Each hair has a shaft that is visible and a root that is embedded in the follicle.

10. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (pī lah MŌ ter) muscle is attached to the side of each hair follicle. It is stimulated by skin irritants, emotional arousal, or cold temperatures, and reacts by contracting. This causes goose flesh or goose pimples.

11. At the base of each hair follicle is the hair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (pah PILL ah), a bulb enclosing a loop of capillaries. It provides nourishment to the hair. It is one of the few living parts of the hair, and is responsible for hair growth.

12. The transparent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ covers the hair shaft like shingles on a roof, protecting it from the elements and chemicals, and from losing moisture.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ provides most of the hair’s weight. It contains *melanin* which provides color to the hair, stores oils, provides flexibility and elasticity, and adds shape to the hair. When the cuticle is damaged and exposes the cortex, hair looks dull and dry.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a inner hollow core that runs the length of the shaft.

13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (sǐ BAY shuss) glands are oil

glands. They have tiny ducts that open into each hair follicle.

14. Each sebaceous gland secretes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (see bum) which lubricates the hair and skin. The amount of secretion

varies with age, puberty, and pregnancy.

Using the terms hair, follicle, pilomotor muscle, papilla, and sebaceous

gland… Label this picture---

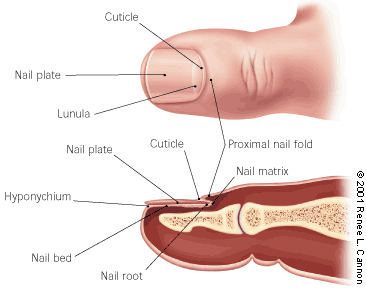
15. Fingernails and toenails are hard \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structures that protect the ends of the fingers and toes.

16. The nail \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, also called the germinal matrix or nailbed, begins several

millimeters into the finger and extends to the edge of the white, crescent-shaped \_\_\_\_\_\_\_\_\_\_\_\_\_. This is where the growth occurs… approximately 1 mm. per week.

17. The under-surface of the nail \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or body of the nail has grooves that help anchor it.

18. The cuticle is also called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (ep ĭi NĬK ee um). It fuses the nail plate and the skin of the finger together to form a waterproof barrier.

19. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (hī poh NĬK ee um)

is under the free edge of the nail. It also creates a waterproof

barrier, fusing the skin of the finger to the underside of the nail plate.

20. A lost finger- or toenail will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

21. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nails are simply those that

have curled down or around and are growing into the skin. They

may become swollen and inflamed. Trim toenails straight across to

avoid this growth pattern.

22. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (soo door RĬF or us) glands are sweat glands.

About 2 million are distributed over the surface of the body, more numerous on the palms of the hands, soles of the feet, forehead, and axillae (AG zil ah) or underarms.

23. Sweat glands produce sweat or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. As sweat collects

on the skin surface, it evaporates and creates a cooling effect. Sweat also rids the body of waste through the pores of the skin.

As it accumulates, sweat may become odorous by the action of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

24. The average person loses approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of fluid through sweating each day.