Study Guide for Test on the Integumentary System

Define the following terms:

1. Sebum – oily, white, fatty substance produced by the sebaceous glands
2. Albinism – recessive genetic trait that causes a deficiency or absence of melanin
3. Melanin – brown to black pigment responsible for skin and hair color
4. Blister – separation of & fluid build up between the epidermis and dermis; caused by rubbing
5. Carcinogen – cancer-causing agent
6. Mole – benign neoplasm
7. Wart – benign neoplasm (uncontrolled growth of epidermis due to papilloma virus)
8. Mitosis – somatic cell division that results in 2 daughter cells identical to the parent cell
9. Acne – disorder of the hair follicles and sebaceous glands
10. Keratin – protein that accumulates in cells of nails, hair & superficial layers of skin
11. Rule of 9’s – rule used to calculate the percent of body surface area
12. Organ – group of tissues working together to perform a similar function

Answer the following questions.

- What are the 2 main layers of the skin and what type of tissue makes up each?
  - Epidermis – stratified squamous epithelial tissue
  - Dermis – vascularized dense fibrous connective tissue

- What are the 5 layers of the epidermis of thick skin and briefly describe each layer. List them in order from the most superficial to the deepest.
  - Stratum corneum – multiple layers of squamous, lifeless, keratin-filled cells
  - Stratum lucidum – squamous keratinocytes
  - Stratum granulosum – flattened keratinocytes in a lipid-rich layer for impermeability
  - Stratum spinosum – several layers of cuboidal and squamous keratinocytes – spiny
  - Stratum basale – single layer of columnar or cuboidal ET – germinating cells (mitosis)

- Which of the above layers is not found in thin skin? Stratum lucidum

- What specific layer gives rise to fingerprints and in which main layer of skin is it found?
  - Dermal papillae (papillary layer of the dermis)

- What are the 5 main functions of the integumentary system?
  - Protection, sensation, vitamin D production, temperature regulation and excretion

- What are the 2 appendages of the skin? Hair and nails

- What are the types of glands found in and under the skin and what do they each secrete? In which layer are the glands found? In what area(s) of the body are each found?
  - Sebaceous glands – secrete sebum; located in the dermis; found everywhere on the surface of the body except the palms of the hands and the soles of the feet.
  - Sudoriferous (sweat glands):
• Apocrine glands – produce a thick secretion rich in organic substances and open into the hair follicles but only in the axillae and genitalia; located at the junction of the dermis and the hypodermis
• Merocrine or eccrine glands – open onto the surface of the skin through pores; located in the dermis; found on almost every part of the skin, but are most numerous in the palms of the hands and the soles of the feet.
  • Ceruminous or wax glands - modified sudiferous glands producing a waxy secretion and situated in the external auditory canal; located in the dermis

8. Why does skin wrinkle with age? Blood flow to skin is reduced, skin becomes thinner and elasticity is lost. Also loss of fat from hypodermis causes skin to sag and wrinkle.

9. What are the 3 classifications of burns? Describe the appearance of each type and whether or not pain is involved. If no pain is involved, explain why.
  • First degree burn – red, slight edema; painful; epidermis only
  • Second degree burn – redness, swelling and blisters; painful; epidermis and upper dermis
  • Third degree burn – White, tan, brown, black or cherry red appearance; painless (nerves have been destroyed); epidermis and dermis completely destroyed

10. What are the 3 types of skin cancer? What is the primary cause of skin cancers? How can skin cancer be prevented?
  • Basal cell carcinoma, squamous cell carcinoma and malignant melanoma
  • Sun or UV radiation
  • Cover up, sunscreen, limit exposure

11. List diseases of the skin that are caused by the following:
   Bacterial infections: acne, impetigo, decubitis ulcers (bed sores)
   Viral infections: rubeola, rubella, chicken pox, Herpes zoster (shingles), cold sores (fever blisters), genital herpes, warts
   Fungal infections: ringworm, athletes foot
   Genetic or environmental causes: eczema, dermatitis, psoriasis

12. Be able to label the following diagram of thin skin: