**5. Integumentary System (skin) homework**

Name and date submitted (3 pts):

Create space in the Word document below, and write or type your answers. KEEP THE SAME NUMBERING SYSTEM AND KEEP THE QUESTIONS INTACT, or I will deduct points. Turn in your work by the due date.

(Approximately 100 sub-questions, average 1 point each)

Structure of the skin (beginning p. 147)

1. Definitions
   1. Integumentary: in = \_\_\_\_\_\_\_\_\_\_; tegere = \_\_\_\_\_\_\_\_\_\_\_
   2. The integumentary system is composed of \_\_\_\_\_\_\_\_\_\_\_\_ (list the 6 items in book)
   3. Dermatology: dermato = \_\_\_\_\_\_\_\_\_; logy = \_\_\_\_\_\_\_\_\_\_
   4. Dermatology is the medical specialty that deals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (complete the sentence using 8 words)
2. The skin covers the entire body and….
   1. in adults, covers an area of about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. and weighs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg
   3. and comprises about \_\_\_\_\_ % of total body weight
   4. and ranges in thickness from \_\_\_\_\_\_\_\_\_\_\_ mm on the eyelids, to \_\_\_\_\_\_\_\_\_ mm on the heels
   5. The top (superficial) layer is known as the \_\_\_\_\_\_\_\_\_\_\_\_
   6. Underneath that layer is a thicker connective tissue portion known as the \_\_\_\_\_\_\_\_\_\_
   7. Then, underneath that layer (deeper), but not part of the skin, is the \_\_\_\_\_\_\_\_\_\_\_ layer consisting of fat (adipose) tissues.
3. Epidermis
   1. Epi = \_\_\_\_\_\_\_\_\_\_\_\_\_\_; dermis = \_\_\_\_\_\_\_\_\_\_\_\_\_
   2. The epidermis is composed of keratinized stratified sq\_\_\_\_\_\_\_\_\_\_\_\_ tissue
   3. The epidermis contains four principle types of cells
   4. Keratinocytes produce the protein “keratin”. What is keratin, and what does it do?
   5. Melanocytes: *“Melano”* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Melanocytes produce the pigment “melanin”. What is melanin, and what does it do?
   7. Where do Langerhans cells arise from, and what is their function?
   8. Where do Merkel cells reside, and what is their function?
   9. Where do you find so-called “thin skin”?
   10. Where do you find so-called “thick skin”?
   11. “Keratinization and Growth of the Epidermis” (p. 152): Summarize this important paragraph in your own words. You can do this as a “list”, but be sure to describe the whole process. If you don’t adequately describe the process, you won’t get credit.
4. Psoriasis (dandruff and flakey skin): Exactly what is going on which causes this? Explain, after reading the “Clinical Connection” window.
5. Dermis (p. 152)
   1. The second, thicker part of the skin, is the dermis. It is composed of what 2 fibers which give it great tensile strength?
   2. The dried and treated dermis of certain animals is used to make what?
   3. What 4 structures are embedded in the dermal layer?

* 1. What are Meissner (tactile) corpuscles, and what is their function?
  2. Free nerve endings in the dermis layer initiate the signals for (5 things)
  3. Fingerprints: How do epidermal ridges form, and what is their function?

1. Structural basis of skin color (p. 153)
   1. List the 3 pigments that impart skin color
      1. M…
      2. H…
      3. C…
   2. The cells which produce melanin are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Finish the sentence: “Differences in skin color are due mainly to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
   4. What caused freckles?
   5. What causes age spots?
   6. What causes a nevus or mole?
   7. Explain, using physiological terms, what causes a tan? If you just say “the sun or tanning lights”, I will throw away this entire assignment. I’m looking for an actual explanation from the book.
   8. How does melanin protect skin from UV damage?
   9. How is a tan eventually “lost”? Explain using physiological terms.
   10. Carotene: explain, using physiological terms, how one’s skin can actually turn orange under certain conditions.
   11. Physiologically speaking, what causes ‘albinism’ in individuals?
   12. Clinical Connection window:
       1. What causes bluish or cyanotic skin?
       2. What causes yellow skin or Jaundice?
       3. What causes redness or Erythema?
       4. What causes paleness or Pallor?
2. Tattooing and Body Piercing (p. 154)
   1. How is a tattoo created? Describe the process, using correct physiology terms. If you write a ridiculous answer, this is going in the trash. This is a Human Anatomy & Physiology class…
   2. Potential complications of body piercing include (from book)
      1. Inf…
      2. All…
      3. An….
      4. Inter…

Accessory structures of the skin (beginning p. 155)

1. Hair: describe the structure and function of
   1. The shaft
   2. The root
   3. The follicle
2. The muscle that raises hair is called the (2 words)….

1. How does hair grow? Describe using correct anatomical terms.
2. Clinical Connection window: Exactly how does chemotherapy cause you to lose hair? Use Physiology terms, please.
3. Hair color
   1. How does hair color arise? What is the mechanism?
   2. How does hair turn gray? What is the mechanism?
   3. What is going on when you color or dye your hair? Describe.
4. Losing your hair (Clinical Connection window): How does Rogaine® work? Be specific and describe the actual mechanism.
5. Sebaceous glands
   1. What are they?
   2. What do they do?
   3. What is the purpose of sebum?
6. Acne (Clinical Connection window): What causes Acne? What’s going on, Physiologically?
7. Sudoriferous glands
   1. What? How? Function?
8. Ceruminous glands
   1. What? Where? Function?
9. Nails
   1. Complete the 28-word sentence: “Nails are plates of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
   2. According to the book, why does most of a nail appear ‘pink’?
   3. Why is the lunula ‘white’? Explain.
   4. Nail matrix: Explain how nail growth occurs, using correct terms.

Functions of the skin (p. 160)

1. Thermoregulation: Your book describes 2 processes going on in the skin which regulate your body temperature. What? How? Be specific…
   1. One process is …… bla bla bla
   2. The other process is ….. please continue
2. Protection: Explain how each of the following protect the body
   1. Keratin
   2. Lipids
   3. Oily sebum
   4. Acidic pH of sweat
   5. Epidermal Langerhans cells
   6. Macrophages
3. Clinical Connection window: Explain how a skin patch can deliver drugs to your bloodstream. Please go into some detail…
4. Explain how Vitamin D is synthesized (made) in the skin

Skin wound healing (p. 162)

1. Epidermal wound healing: Explain the process by which minor wounds – abrasions, scrapes, and minor burns – are healed
2. Deep wound healing: Read the section and answer the following as best you can
   1. What happens during the inflammation phase? What is it, what’s going on?
   2. What is going on during scab formation? Explain.
   3. What is going on during the proliferative phase of wound healing?
   4. What is going on during the maturation phase?
   5. What causes a scar? How is scar tissue different from normal skin?

Skin aging (p. 164)

1. Effects and treatments
   1. Wrinkles
      1. What happens to the collagen fibers?
      2. What happens to the elastic fibers?
      3. What happens to fibroblasts?
   2. What age-related changes lead to dry and broken skin?
   3. What leads to gray hair?
   4. What causes hair loss?
   5. What is a chemical peel?
   6. What is laser resurfacing?
   7. What is a ‘dermal filler’?
   8. How does Botox™ work?
   9. What happens in a facelift/browlift/necklift procedure?
   10. What is a ‘threadlift’?

Skin cancer (p. 168)

1. Basal cell carcinoma: What’s going on?
2. Squamous cell carcinoma: What’s going on here?
3. Malignant melanoma: What’s this one all about?
4. Risk Factors: Explain how each of these relates to skin cancer
   1. Skin type
   2. Sun exposure
   3. Family history
   4. Age
   5. Immunological status

Burns (p. 168)

1. Describe and explain the severity of each of the following burns
   1. First-degree burn
   2. Second-degree burn
   3. Third-degree burn

Tattoos

1. Sally reassures her mother that the tattoo she received at the tattoo parlor will eventually disappear. She knows this because she has learned in anatomy class that skin cells are shed every four weeks. Is Sally correct? Why or why not. Explain using correct terminology. Be specific.