2 INTEGUMENTARY SYSTEM - CHAPTER 5

______: An organ - two or more tissues functioning
_______ sq. m, 9-11 lbs, 7% of body weight
_______ mm thick
Two layers – _________ & _________
  A. Epidermis – protective layer w/o ________________
  B. Dermis – __________ tissue – fibrous & __________
in passes nutrients to _________ by __________

A. __________/subcutaneous layer – a lot of _________
tissue that helps _________ skin to _____________
  1. Technically __________ of the skin
  2. Gives the skin a ____________ so it can slide around
  3. Heat___________, shock ____________

4 Epidermis
I. _________ types of cells
  A. __________ – 90% - contain _________ which is a
     _________ waterproof _________ that provides the
     protective qualities
     1. Tightly interconnected with ___________
     2. develop deep, on _____________l that has actively
        ____________ stem cells
        a. cell are pushed _____________ by newly produced cells

5 Fig. 5.2; pg. 151
6 B. ____________ – Produce (___________) pigment granules to ___________ from ____________ in sun
1. Two forms of melanin:
   a. ______________
   b. ______________
2. Granules migrate - to ____________, sunny side of keratin cell ____________
C. Epidermal ____________/Langerhans cells – Immune system cells
D. ______________ – nerve receptors involved w/ sense of ____________

7 Fig 5.2 pg 151; Structure Features of Epidermis

8 II. Epidermis layers
A. Thick skin Deep to superficial (apical)
   1. ____________ (stratum _____________): Single layer of cuboidal & columnar cells that contains ____________ and the stem cells that produce the ____________ that will be pushed upward

   2. ____________ : 8-10 layers closely packed cells. Long ____________ from ____________, carrying ____________granules, pass through the keratinocytes

   3. ____________ : 3-5 layers of flattened cells containing _________ kinds of ____________.
      a. Start the process of filling the cells with ____________ 
      b. Waterproof the ____________ w/ ____________
      c. Cause all the cells ____________ to die
4. _______________: “Clear layer” ____________
a. _______________ t band of keratinized cells.
b. Found only in ________ skin – __________________

10 _______________: Outermost layer
a. ________ of epidermis _________ – 20-30 layers
b. Protection:
1. _________ & _____________ for waterproofing
2. keratin – __________
3. biological, chemical, physical ___________
c. Cornified: corn (l) horn (cow horn) – __________
1. Dead cells slough off: __________. Per life time
2. __________

Figure 5.2  pg 151

12 III. DERMIS
A. Strong connective tissue
1. ________, _________, ______________ blood cells
2. __________ (ground substance & fibers): __________ –
binds entire body __________
3. Plentiful supply: ________ fibers, _____________ vessels,
-__________ glands & ________ follicles

B. Two Layers
1. -

13 b. ___________: Little _________that project up __________

1. Contain ___________, ____________ (pain, soft touch)
2. Some sit on deeper ___________ that project up _____ the - ________
   • Produce ___________ for ___________

14 Fig. 5.3 pg. 153

15 2. ___________: ________ to ___________ region
   a. ________ of dermis
   b. coarse __________ connective tissue, w/ _____________ fibers (___________)
   c. leather/ hide

C. Subcutaneous Layer
1. Not part of dermis/skin – just deep to it
2. Connects dermis to underlying tissues (muscle)
3. Areolar & adipose tissue

16 Figure 5.1; pg. 149 Skin Structure

17 ___________ of the Skin: ________ glands, ____________ glands (______ glands), __________
   Sweat Glands: (___________) “almost” all over – ________
   • Controlled by __________ system to allow body __________

I. Two types
A. ________: Sweat is deposited to skin surface by a ________
1. high conc. ________, ________ of feet, __________
2. ______ water- salts, wastes, _______________________
18 B. __________: ________, ________ (arm pit) & ________ regions
   1. Secretion like eccrine plus ____________________ – supports __________ growth - ________
   2. Secretes in ______________
C. Modified _________ glands
   1. ___________ glands: produce __________ or earwax – - ________
   2. ___________ glands: milk-___________ young

19 __________ Glands (_______)
I. Secrete __________ into__________ follicle
II. ___________ hair & skin - __________
III. _________ Glands: Secretion & __________

20 Hair:
   A. _________________
   B. All of our body _________ palms, soles, lips & genitalia
Structure:
   A. made up of _______________
      1. __________ & doesn’t flake off
   B. Shaft projects from skin &___________ is complete
   C. Root is deep in follicle, keritization is __________

21 D. _______________
   1. _____ concentric layers
      a. __________ – ________ layer w/ large cells, air space & has ____________
      b. __________ – ________ - ________ layers of flattened cells & contains ____________
       1. ___________: yellow, rust, brown & black or __________ (red)
          – made in ___________ in ________ of hair __________
22 c. __________ – __________ layer of single, heavily keratinized, __________________________ cells
1. Heavy – keeps hair __________ & compacted
2. Keeps hairs __________ – not matted
3. Wears at end __________

2. Cross Section
a. Flat – kinky/___________ curls
b. Oval – __________
c. Round - __________

23 Figure 5.6 Hair & Follicle Structure

24 Hair __________: (folli (l) = ________)  
1. Extends into epidermis & dermis, ________ into scalp  
2. The follicle base (______) contains a________, with - ________ to ________ hair cell production  
3. Papillae covered with __________ the actively __________ hair ___________ cells  
4. Hair follicle walls consist of __________ (dermal) & - ___________ (epidermal) sheaths

25 Fig. 5.6 c pg. 158

26 Hair follicle __________
• If hair is __________ (moved) the follicle is also - __________ the follicle which acts as a stimulus that is - __________.

____________________ connects to hair follicle  
• If the muscle __________ it ________ the hair.
creates more __________ for better ___________/heat retention

Hair on back of neck, ____________

27 Figure: 5.1; page: 149

28 __________: Hard, __________, scale like epidermis modification for __________

- Correspond to ______________

I. Structure
A. __________: Visible part of nail – pinkish, underlying - __________

- Figure 5.7 Pg. 160

1. __________: distal aspect
2. ____________ : buried under proximal nail fold of skin
3. ____________: _________ epidermal cells for nail - ____________ – nail slides forward

29 4. __________: ______________ (____________ tissue) is __________ so vascular tissue does’t show through
5. ____________ : epidermis under the nail body
6. ____________ (eponychium): part of proximal nail fold lying on proximal nail body

30 Figure 5.7 pg. 160: Structure of Nail