

Chapter 3-II: Physiology and Histology of the Skin

Name: _____ Date: _____ Score: _____ / 59 pts

Circle the letter of the best answer. Each question is worth 1 point.

1. How is the skin nourished?

- a) Through the blood and air
- b) Through the blood and lymph
- c) Through the lymph and nerve endings
- d) Through the capillaries and glands

2. What is the largest organ in the human body?

- a) Liver
- b) Skin
- c) Lungs
- d) Heart

3. What is the protective covering on body surfaces?

- a) Muscular tissue
- b) Epithelial tissue
- c) Nerve tissue
- d) Adipose tissue

4. What supplies nutrients to skin cells?

- a) Blood
- b) Food
- c) Nerves
- d) Lymph

5. What are the six primary functions of the skin?

- a) Sensation, Protection, Heat regulation, Excretion, Secretion, Absorption
- b) Sensation, Pigmentation, Heat regulation, Excretion, Secretion, Absorption
- c) Sensation, Protection, Hydration, Excretion, Secretion, Absorption
- d) Sensation, Protection, Heat regulation, Elimination, Secretion, Absorption

6. What is the function of sudoriferous (sweat) glands?

- a) Excrete oil
- b) Regulate body temperature
- c) Regulate water-salt balance only
- d) Produce melanin

7. Which ingredients does sweat contain?

- a) Water, sugar, trace minerals, odor
- b) Water, lactate, trace minerals, odor
- c) Water, lactate, urea, trace minerals
- d) Water, salt, urea, odor

8. What excretes perspiration and detoxifies the body by excreting excess salt and unwanted chemicals?

- a) Regular exfoliation
- b) Regular showering
- c) Sudoriferous glands
- d) Pituitary glands

9. What keeps the skin soft and protected from outside elements?

- a) Water
- b) UV protector
- c) Oil from sebaceous glands
- d) Moisturizer

10. What is an acid mantle?

- a) Skin produces sebum and sweat, creating a protective barrier on the surface
- b) Skin produces oil and dead cells, creating a barrier on the surface
- c) Skin produces water and fat, creating a protective barrier
- d) Skin produces sebum and water only, creating a barrier

- 11. What is the pH range of the skin?**
- a) pH 6.2 to 7.5
 - b) pH 7.0 to 7.5
 - c) pH 4.5 to 6.2
 - d) pH 4.5 to 7.5
- 12. What is the outermost layer of the skin?**
- a) Dermis
 - b) Epidermis
 - c) Papillary layer
 - d) Reticular layer
- 13. Do blood vessels exist in the epidermis?**
- a) Yes, throughout all layers
 - b) No — the epidermis is avascular
 - c) Only in the stratum germinativum
 - d) Only in the stratum granulosum
- 14. Where can adipose tissue be found?**
- a) Basal (germinativum) layer
 - b) Subcutaneous layer
 - c) Stratum granulosum
 - d) Reticular layer
- 15. In which layer of the skin is collagen found, and at what percentage?**
- a) 70% in the dermis
 - b) 70% in the epidermis
 - c) 30% in the dermis
 - d) 30% in the epidermis
- 16. What are the two layers of the dermis?**
- a) Papillary layer and reticular layer
 - b) Epidermis layer and subcutaneous layer
 - c) Stratum corneum and stratum spinosum
 - d) Basal layer and granular layer
- 17. Which layer of the skin begins to lose its elasticity as a result of aging?**
- a) The papillary layer
 - b) The reticular layer
 - c) The stratum spinosum
 - d) The stratum granulosum
- 18. What is known as intercellular cement?**
- a) Lipids
 - b) Enzymes
 - c) Lymph
 - d) Dead cells and water
- 19. Which of the following correctly lists all five layers of the epidermis from deepest to surface?**
- a) Germinativum, Spinosum, Granulosum, Lucidum, Corneum
 - b) Spinosum, Germinativum, Lucidum, Granulosum, Corneum
 - c) Germinativum, Granulosum, Spinosum, Lucidum, Corneum
 - d) Corneum, Lucidum, Granulosum, Spinosum, Germinativum
- 20. Where are keratinocytes found?**
- a) Basal (germinativum) layer
 - b) Stratum corneum only
 - c) Stratum lucidum only
 - d) Dermis
- 21. Where are keratin cells (fully keratinized) found?**
- a) Dermis
 - b) Epidermis
 - c) Adipose tissue
 - d) Papillary layer
- 22. The cells of the stratum spinosum are known as the:**
- a) Spiny cells
 - b) Clear cells
 - c) Grainy cells
 - d) Horny cells

- 23. What is another name for the horny layer?**
- a) Stratum germinativum
 - b) Stratum lucidum
 - c) Stratum granulosum
 - d) Stratum corneum
- 24. In which area of the body is the stratum lucidum found?**
- a) Face and neck only
 - b) Scalp only
 - c) Palms of hands and soles of feet
 - d) Throughout the entire body
- 25. In which layer are melanocytes produced?**
- a) The basal (germinativum) layer
 - b) The reticular layer
 - c) The stratum corneum
 - d) The stratum lucidum
- 26. What is the function of Langerhans cells?**
- a) Protect from infection by activating immune response
 - b) Cause brittle capillaries
 - c) Help intercellular lipids keep cells together
 - d) Produce sebum
- 27. What is the name of the structures that hold skin cells together?**
- a) Detergents
 - b) Desmosomes
 - c) Intracellular glue
 - d) Body cement
- 28. Collagen is produced by:**
- a) Fibroblasts
 - b) Hair papilla
 - c) Capillaries
 - d) Elastin fibers
- 29. What are antioxidants?**
- a) Free proteins that nourish cells
 - b) Free radical friends
 - c) Free radical boosters
 - d) Free radical scavengers
- 30. What best describes free radicals?**
- a) Vitamins, amino acids, and natural substances
 - b) Cells that stimulate fibroblasts to produce collagen
 - c) Chemicals that improve muscle tone and skin sagging
 - d) Aggressive, unstable, oxygen-containing molecules
- 31. What process occurs when melanin is transferred from melanocytes to surrounding cells?**
- a) Keratinization
 - b) Melanization
 - c) Desquamation
 - d) Glycation
- 32. Estrogen is present in:**
- a) Both males and females
 - b) Men only
 - c) Women only
 - d) Children only
- 33. What is the arrector pili muscle attached to?**
- a) Tendons
 - b) Skin surface
 - c) Goosebumps
 - d) Hair follicle
- 34. Where does hair start growing?**
- a) Dermis — at the hair papilla
 - b) Cortex
 - c) Epidermis
 - d) Stratum corneum

35. What are the two types of sweat glands?

- a) Eccrine and apocrine
- b) Sebaceous and eccrine
- c) Apocrine and sebaceous
- d) Eccrine and exocrine

36. What type of keratin do nails contain?

- a) Soft keratin
- b) Hard keratin
- c) Flexible keratin
- d) Soluble keratin

37. What is the function of motor nerves in the skin?

- a) Carry sensation from skin to brain
- b) Carry sensation from skin to spinal cord
- c) Carry impulses TO the skin FROM the spinal cord and brain
- d) Carry sensation from the autonomic system only

38. What protects the skin from the sun?

- a) Moisturizer
- b) Heavy cream
- c) Melanin
- d) Foundation makeup

39. What on the epidermis gives broad protection from external factors?

- a) Melanin
- b) Sebum
- c) Collagen
- d) Water

40. Which type of skin ages very slowly?

- a) Asian skin
- b) Black skin
- c) Caucasian skin
- d) Chinese skin

41. What kind of benefit can skin get from UV rays?

- a) Manipulating skin texture
- b) Disinfecting the skin
- c) Tanning
- d) There is no benefit

42. An esthetician should advise clients to avoid sun exposure during:

- a) Late afternoon
- b) Early evening
- c) Early morning
- d) Midday (10am–4pm)

43. Most skin types age faster when exposed to:

- a) Humidity
- b) Low altitudes
- c) Dampness
- d) Air pollutants

44. The epidermis of the skin is penetrated by:

- a) Green rays
- b) Blue rays
- c) Ultraviolet rays
- d) White rays

45. Which layer of the skin do UV rays reach?

- a) Stratum corneum only
- b) Stratum germinativum only
- c) Dermis
- d) Adipose layer

46. What does Titanium Dioxide do with UV rays?

- a) Reflects UV rays
- b) Absorbs UV rays
- c) Dissolves UV rays
- d) Converts UV rays to infrared heat

47. What does a photosensitizer do?

- a) Makes the skin more sensitive to sun damage
- b) Makes the skin less sensitive to sun damage
- c) Makes the skin impervious to sun damage
- d) Has no direct effect on the skin

48. What damage do internal aging factors cause to the skin without sun exposure?

- a) No damage at all
- b) Light damage
- c) Moderate damage
- d) Heavy damage

49. UVA radiation is best described as:

- a) Synthesizes Vitamin D and causes burning
- b) Reacts primarily with the ozone layer
- c) Causes burning and superficial tanning only
- d) Weakens the skin's collagen and elastin fibers (aging rays)

50. The body's three defenses against infection are:

- a) Unbroken skin, inflammation, and antibodies
- b) Natural immunity, acquired immunity, and red blood cells
- c) Blood-borne pathogens, local infection, and abscess
- d) None of the above

51. Drugs and alcohol in large quantities adversely affect the skin because they interfere with the body's intake of:

- a) Liquids
- b) Air
- c) Oxygen
- d) Water

52. Which of the following is NOT a sign of alcohol abuse?

- a) Dry skin
- b) Over-dilated blood vessels
- c) Dehydrated skin
- d) Healthy, well-nourished skin

53. As skin cells divide in the basal layer, they:

- a) Migrate upward to the surface
- b) Become weaker
- c) Sink deeper into the body
- d) Immediately die off

54. What is glycation and how does it affect the skin?

- a) Sugar molecules bind to collagen/elastin, making them stiff and causing premature aging
- b) The skin absorbs glucose to produce energy
- c) A method of skin exfoliation using sugar-based products
- d) The natural moisturizing process of the skin

55. Smoking most directly affects the skin by causing:

- a) A constant flushed appearance
- b) Overly oily skin
- c) Premature aging and wrinkling
- d) Development of rosacea

56. As women age, which hormone is progressively depleted, affecting skin health?

- a) Testosterone
- b) Glycosaminoglycan
- c) Estrogen
- d) Cortisol

57. A hormone imbalance that increases sebum production is most likely caused by elevated:

- a) Estrogen
- b) Testosterone (androgens)
- c) Cortisol
- d) Progesterone

58. Which is the correct sequence of skin layers from deepest to surface?

- a) Subcutaneous → Epidermis → Dermis
- b) Epidermis → Dermis → Subcutaneous
- c) Subcutaneous → Dermis → Epidermis
- d) Dermis → Subcutaneous → Epidermis

59. A client uses a prescription retinoid cream. Before booking her for a chemical peel, you should:

- a) Proceed — retinoids improve peel results
- b) Ask the client to discontinue retinoid and wait before the peel
- c) Apply a thicker layer of peel solution to counteract the retinoid
- d) Perform the peel only if the client signs a waiver