

Anatomy and Physiology: Integumentary, Skeletal, and Muscular Systems Answer Key

1. Hair
2. Sweat pore
3. Epidermis
4. Arrector Pili
5. Dermis
6. Hypodermis
7. Muscle
8. Nerve
9. Follicle
10. Pacinian corpuscle
11. Sweat gland/Sudoriferous gland
12. Sebaceous gland
13. Meissner's corpuscle

14. The effects of the intrinsic aging of the skin are **caused by internal factors**. These factors can include: **reduced or defective collagen synthesis and elastin synthesis** in the dermis. Aging skin receives **lower levels of glandular activity** and **less blood flow**. A **decrease in volume** is very visible in aging skin.

15. The extrinsic aging of the skin is **caused by external factors**. These factors include **UV radiation, smoking, drug use, and air pollution**.

16.

1. Anagen: active phase of the hair. Cells of the root of the hair rapidly divide. Lasts an average of 3-5 years.

2. Catagen: hair growth stops, the outer root sheath shrinks and attaches to the root of the hair. This is the formation of a club hair. This is a transitional phase that lasts 2-3 weeks.

3. Telogen: resting phase, hair follicle is completely at rest and the club hair is formed, the hair is also released and falls out during this phase. The follicle then remains inactive for about 3 months and the whole cycle begins again. This phase can last about 100 days but can last longer depending on the location of the hair.

17. D

According to the Rule of Nines, arms = 9% each, anterior legs = 9% each, and the anterior trunk = 18%. So the patient's burns cover 36% of the body surface area.

18. Impetigo. Symptoms include **red sores** that rupture and ooze eventually forming a yellow-brown crust. Treatment include **antibiotic creams or drugs**.

19. Second-degree burn. The **epidermis** and parts of the **dermis** would be affected by this type of burn. Treatment include running the affected area under cool water for 15 mins, taking pain meds, and applying antibiotic creams to the burn wound.

20. Pustular Psoriasis. Flu-like symptoms are caused as a result of this disease. Fever, chills, nausea also acceptable.

- 21. A. Ball & Socket: allows for movement in all directions
- B. Hinge Joint: allows for motion in one plane
- C. Saddle Joint: two directional movement; allows for all motion except rotation
- D. Plane/Gliding Joint: side-to-side movement only
- E. Pivot Joint: allows for rotational motion
- F. Ellipsoid Joint: side to side and back & forth, does not allow for significant rotational movement

22. a. Thoracic

b. Middle segment of the vertebral column; between the cervical vertebrae and lumbar vertebrae

23. a. Lumbar

b. 5

c. Between the rib cage and pelvic

24. a. Cervical

b. Vertebrae of the neck, right below the skull

c. Atlas

25. C

30. A

35. a. Trapezius

f. Sartorius

26. C

31. C

b. Pectoralis Major

g. Latissimus Dorsi

27. C

32. B

c. Sternocleidomastoid

h. Gluteus Maximus

28. B

33. B

d. Deltoid

i. Gastrocnemius

29. B

34. C

e. Rectus Abdominus

j. External Oblique

36. a. Epimysium

37. C

43. Acetylcholinesterase

b. Tendon

38. B

44. Muscle hypertrophy occurs when muscle cells **grow in size**. This can happen as a result of exercise which can increase sarcoplasmic volume and myofibril size. Muscle hypertrophy differs from muscle hyperplasia in that hyperplasia is the **growth of new cells**. Muscle atrophy is the **shrinking** of muscle cells which is caused by injury, lack of exercise or aging. Muscle atrophy can also be caused by AIDS, cancer and other diseases.

c. Bone

39. C

d. Perimysium

40. A

e. Blood vessel

41. B

f. Muscle fiber

42. B

45. Adduction is the movement of a body part **towards** your midline. Abduction is the movement of a body part **away** from the midline.

g. Fascicle

h. Endomysium