Anatomy C - Anatomy and Physiology C - Camas C-Invite - 12-12-2020

GLHF, don't cheat, do good.

1. (4.00 pts) Identify and describe the four primary characteristics of muscle tissue.

2. (4.00 pts) Identify and describe the structure and function of the three layers of skeletal muscle tissue.

What is this three-layer system known as?

3. (6.00 pts) Identify and describe the three types of muscle contractions.

4. (6.00 pts) Identify and describe the three main types of skeletal muscle fibers.

5. (6.00 pts) Identify and describe the major types of type 2 fast-twitch muscles.

6. (1.00 pts)
The speed of muscle contraction is relatively static in a single muscle type because the rate of ATP hydrolyzation via myosin ATPase to produce cross-bridge action is also relatively static.

○ True ○ False

7. (1.00 pts) Muscle contraction activity generates the majority of body heat.

○ True ○ False

8. (1.00 pts) When skeletal muscle has been dormant and then activated, initial contractions generate about half the force of later contractions

○ True ○ False

9. (1.00 pts) Muscle tension increases in a graded manner called wave summation, and later muscle contractions become more efficient.

○ True ○ False

10. (1.00 pts) Both Type 1b sensory nerve fibers and Aα fibers are innervated by the Golgi Tendon Organ.

○ True ○ False

11. (1.00 pts) The Golgi Tendon Organ (GTO) is responsible for detecting changes in muscle length.

○ True ○ False

12. (3.00 pts)
What cardiac muscle cells are responsible for maintaining the rhythm of heartbeats? What property of these cells allows them to control this? Describe this mechanism briefly.

13. (1.00 pts) What protein do calcium ions interact with to innervate muscle contractions? (Hint: messenger protein)

14. (25.00 pts) For the following muscles, identify its primary biomechanical/kinesiological function, target, target motion direction, origin, and insertion.

Orbicularis Oris

Orbicularis Oculi

Zygomaticus Major

Transversus Abdominis

Internal Intercostals

15. (30.00 pts) For the following muscles, identify its primary biomechanical/kinesiological function, target, target motion direction, origin, and insertion.

Brachialis
Palmaris Longus
Extensor carpi ulnaris
Gluteus medius
Gracilis
Vastus intermedius

16. (2.00 pts) Which of the following substances can freely pass through the integument?

(Mark **ALL** correct answers)

- ☐ A) Small molecules
- ☐ B) Fat-soluble vitamins
- ☐ C) Small inorganic solvents
- ☐ D) Oleoresins
- ☐ E) Heavy metal salts
- ☐ F) Water

17. (1.00 pts) Rosacea is a common, contagious, inflammatory disease relating to cathelicidins.

○ True ○ False

18. (6.00 pts) Identify and describe the three layers of the integumentary vascular supply. Describe what each region of the integument each layer supports/supplies.

19. (8.00 pts) Identify the primary physical appearance characterized by the following skin conditions and identify/describe one possible cause for each.

Jaundice

Pallor

Bronzing

Vitiligo

20. (1.00 pts) Nociceptors are the least numerous type of integumentary receptor.

○ True ○ False

21. (1.00 pts) TRPV1 receptors are involved in the detection of cold.

○ True ○ False

22. (1.00 pts) TRPA receptors require only brief stimuli to be innervated, while chemical receptors require long-lasting stimuli.

○ True ○ False

23. (1.00 pts) The ratio of hot:cold (hot:cold) receptors in a single square inch of skin is approximately 6:1.

○ True ○ False

24. (7.00 pts)
Describe the critical points in temperature (points at which they are stimulated and when they stop stimulating) for hot receptors and cold receptors. At what temperature do pain receptors take over? At what temperatures do hot and cold receptors become stimulated the most?

25. (16.00 pts)
Identify and describe the anatomy and physiology of the four main types of cutaneous mechanoreceptors (what do they each sense?). For each, describe the receptive field.

26. (30.00 pts)
Identify and describe the five main sensory fibers located in the integumentary system. Discuss their relative sizes, myelination patterns, conduction velocities, locations, and types.

27. (2.00 pts) Which of the following are major elements of sebum?

(Mark **ALL** correct answers)

☐ A) Cholesterols

☐ B) Organic salts

- [ ] C) Pheromones
- [ ] D) Nitrogenous wastes
- [ ] E) Dermicidin
- [ ] F) Cerumen

28. (1.00 pts) Lanugo describes hair that is short, fine, pale, and barely visible to the eye.

○ True ○ False

29. (1.00 pts) The bulb of the hair follicle contains blood vessels that nourishes the follicle.

○ True ○ False

30. (1.00 pts) Piloerector muscles are small, skeletal muscles involved in the contraction of hair follicles, pulling hair straight up.

○ True ○ False

31. (15.00 pts)
Describe the stages of the hair growth cycle, in detail. In each stage, discuss the length of time hairs remain in that particular stage, growth rate, and other key events that characterize that stage.

32. (12.00 pts) Identify the two types of contact dermatitis. For each, identify at least 5 substances that can contribute to the formation of dermatitis.

33. (16.00 pts) Identify and describe the four degrees of burn injuries. For each degree, identify the portions of integument affected, symptoms, and healing/treatment procedures.

34. (2.00 pts) For the following image, identify the presented condition.

35. (2.00 pts) For the following image, identify the presented condition

36. (2.00 pts) For the following image, identify the presented condition

37. (2.00 pts) For the following image, identify the presented condition

38. (2.00 pts) For the following image, identify the presented condition

39. (2.00 pts) For the following image, identify the presented condition.

40. (2.00 pts) For the following image, identify the presented condition.

41. (7.00 pts) Identify and describe the types of fibrous joints. In what subtype does a synostosis identify as?

42. (4.00 pts) Identify and describe the types of cartilaginous joints.

43. (8.00 pts) Identify and describe the functional classifications of joints. For each type, indicate mobility and at least two examples.

44. (30.00 pts)
Identify and describe the six types of synovial joints. For each type, discuss the anatomical joint structure, a type of motion associated with the joint, an example of the type of joint, and the number of axes that the joint can move in.

45. (2.00 pts) Match the following type of motion.

Touching thumb to fingertip

- A) Flexion
- B) Circumduction
- C) Supination
- D) Pronation
- E) Opposition
- F) Reposition

46. (2.00 pts) Match the following type of motion

Jutting the mandible outwards

- A) Extension
- B) Supination
- C) Protraction
- D) Excursion
- E) Opposition
- F) Reposition

47. (2.00 pts) Match the following type of motion.

A ballerina points her toes down during a jump.

- A) Extension
- B) Flexion
- C) Rotation
- D) Plantar flexion
- E) Dorsiflexion
- F) Superior rotation

48. (2.00 pts) Match the following type of motion.

Shrugging your shoulders.

- A) Circumduction
- B) Supination
- C) Pronation
- D) Extension
- E) Elevation
- F) Depression

49. (4.00 pts) Identify and briefly describe the two methods of cartilage growth.

50. (12.00 pts) Identify and describe the three types of cartilage. For each type, discuss the structural makeup and most common locations (at least two).

51. (2.00 pts) Calcified cartilage is never classified as bone tissue.

○ True ○ False

52. (2.00 pts) The anterior nasal septum is formed by septal cartilage.

○ True ○ False

53. (2.00 pts) The maxillary sinus is the smallest, located within both maxillary bones, below the orbits.

○ True ○ False

54. (2.00 pts) The hyoid bone does not articulate with any other bone in the human body.

○ True ○ False

55. (2.00 pts) The base of the skull is separated into four cranial fossae: anterior, middle, posterior, and deep.

○ True ○ False

56. (2.00 pts) The internal acoustic meatus is the opening located inside the cranial cavity, on the medial side of the petrous ridge.

○ True ○ False

57. (2.00 pts) The ethmoid bone, also known as the "keystone" bone, joins with almost every other bone in the skull.

○ True ○ False

58. (2.00 pts) The squamous suture is a small, H-shaped suture at the intersection of the frontal, parietal, and squamous portion of the temporal bones.

○ True ○ False

59. (2.00 pts) Initial development of the vertebral column starts with 33 vertebrae, but these later fuses to 24.

○ True ○ False

60. (2.00 pts) The artery that supplies the brain travels through the transverse foramen in the cervical vertebrae.

○ True ○ False

61. (10.00 pts) Identify the five major ligaments of the vertebral column.

62. (2.00 pts) The sternum is mainly cartilaginous in early life.

○ True ○ False

63. (2.00 pts) The shallow costal groove exists for the passage of blood vessels in ribs.

○ True ○ False

64. (2.00 pts) The clavicle is the only horizontal long bone that exists in the human body.

○ True ○ False

65. (2.00 pts) The sternoclavicular joint is indirectly supported by the sternoclavicular ligament.

○ True ○ False

66. (2.00 pts)
The primary support for the acromioclavicular joint comes from the very weak coracoclavicular ligament, a common reason for the relatively easy dislocation of the joint.

○ True ○ False

67. (2.00 pts) The interosseous membrane of the forearm is a sheet of dense connective tissue that unites the radius and the ulna.

○ True ○ False

68. (2.00 pts) The extended forearm deviates from the arm by about 5-15 degrees, allowing the forearm and the hand to swing without hitting the hip, particularly in females.

○ True ○ False

69. (2.00 pts) Metacarpals 2-4 are relatively immobile, while 1 and 5 are free.

○ True ○ False

70. (2.00 pts)
The acetabulum is the convergence of the three areas of the hipbone that form the deep, cup-shaped cavity, located on the medial side of the hip bone as part of the hip joint.

○ True ○ False

71. (2.00 pts) The greater trochanter of the femur is a large, upward facing, bony projection above the base of the neck, where multiple muscles attach.

○ True ○ False

72. (2.00 pts) On the lateral side of the distal tibia is where the fibular notch exists, a wide groove that forms the distal tibiofibular joint.

○ True ○ False

73. (7.00 pts) So you like ankles? Name every tarsal bone.

74. (8.00 pts) Compare and contrast the anatomical composition of the two bone membranes.

75. (15.00 pts) Identify and describe the types of bones and provide an example for each.

76. (8.00 pts) In high detail, compare and contrast the anatomical composition of compact bone and spongy bone.

77. (20.00 pts) Compare and contrast the two development pathways of bone formation.

78. (6.00 pts) Describe the process of bone repair.

79. (8.00 pts) Identify and describe the three levels of sprain injury. How does the acronym PRICE relate to this?