

****One point for each labeled on diagrams****

****One point for each multiple choice unless other notes are made****

****Three points for each short response/case study****

1:

- 1a) Epidermis
- 1b) Dermis
- 1c) Hypodermis
- 2) Basement membrane
- 3) Hair shaft
- 4) Arrector pili muscle
- 5) Sebaceous gland
- 6) Dermal papillae
- 7) Pacinian corpuscles
- 8) Nerve ending
- 9) Adipose tissue
- 10) Eccrine sweat gland
- 11) Hair follicle
- 12) Hair follicle
- 13) Veins
- 14) Arteries

2)

- A) Lateral skin fold
- B) Lunula
- C) Free edge
- D) Nail plate/body
- E) Nail bed
- F) Cuticle/eponychium
- G) Proximal nail fold
- H) Nail root
- I) Nail matrix/germinal matrix
- J) Hyponychium
- K) Phalanx

3) C

4) B

5) B

6) A

7) C

8) D

9) Meissner's corpuscles : C

Pacinian corpuscles : A

Merkel's disk : D

Ruffini endings : B

10) A

11) E

12) A

13) B

- 14) C
- 15) B
- 16) D
- 17) D
- 18) D
- 19) A

20) The infection shown is a boil. Three symptoms can be any of the following: A painful red bump, red swollen skin around the bump, an increase in size over a few days, development of a yellow-white tip. Medications can be any of the following: penicillin or amoxicillin, antibiotics.

21) Psoriasis is shown in the image, the type is erythrodermic psoriasis. Any 2 of the following drugs: cyclosporine, methotrexate, acitretin, etanercept, adalimumab, ixekizumab, golimumab.

22) This is caused by trichophyton rubrum, another term for this disease is tinea pedis.

23) This rash is caused by poison ivy. Any 3 of these plants: poison oak, poison ivy, poison sumac, toxicodendron vernicifluum.

24) Image E shows psoriasis which is different from eczema in appearance because psoriasis tends to be more scaly and be thicker/more inflamed than eczema. Psoriasis also tends to have flakier and more pieces of skin on the surface compared to eczema.

25) This disease tends to be found most often in the hands and feet in adults, while in older children they are found on the neck, neck creases, wrists and ankles.

26) Hives are caused by an allergen, they can be caused by bugs such as carpet beetles, caterpillars, bed bugs, bird mites, clover mites and other insects. This is an autoimmune disease.

27) The disease in image H(warts) is sexually transmitted, some can go away without treatment depending on the severity.

28) Staphylococcus aureus and streptococcus pyogenes can cause this. This condition is usually found in school age children.

29) Scabies, also called sarcoptic mange, is contagious.

30) A fungal infection is shown, if not treated, it can lead to blistering and bleeding caused by constant scratching due to itchiness.

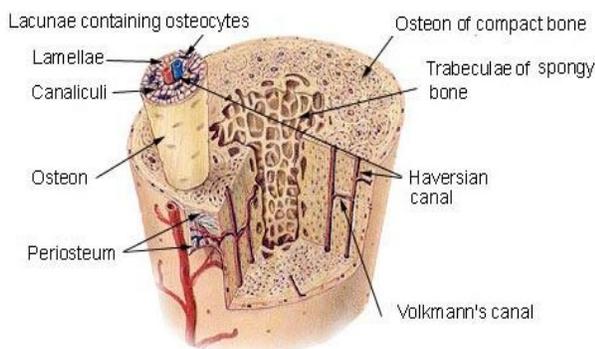
31) AC ****2 points**

32)AB ****2 points**

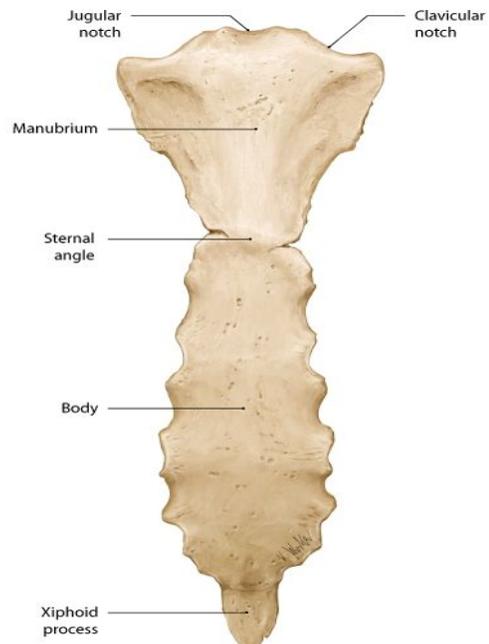
33) D

34)

Compact Bone & Spongy (Cancellous Bone)



35)



36) Femur, tibia, fibula, humerus, ulna, radius, 7th rib, 8th rib, sternum

37) B

- 38) C
- 39) C
- 40) C
- 41) C
- 42) B
- 43) D
- 44) A
- 45) D
- 46) A
- 47) A
- 48) C
- 49) A
- 50) B
- 51) B
- 52) A
- 53) A
- 54) B
- 55) D
- 56) A

Case studies:

57) The reason why Rita got diagnosed with osteoporosis is because of her family history (Type 2 OI). She was experiencing frequent nose bleeds and had brittle discolored teeth. Her body was producing enough collagen but it was poor quality. Rita can eat more foods that promote collagen growth and take

58) Joe has a torn PCL which can be sometimes referred to as a dashboard injury. Joe needs to undergo ligament/PCL reconstruction which requires a piece of tendon usually from the back of the thigh or heel.

59) Bob has an avulsion fracture on his 5th phalange. Yes, an avulsion fracture can usually be treated with rest, ice, compression and elevation.

60) Subluxation is the partial dislocation of a joint while a dislocation is when a joint separates completely (e.g the humerus popping out of its socket completely). A dislocation is more severe but a subluxation won't hurt any less than a dislocation. No, surgery is usually not needed unless Bob dislocates/subluxates his shoulder repeatedly.

61) Ruby has rheumatoid arthritis. It is a chronic disease. Pink synovial fluid can indicate an inflammatory disease within your joints/bones.

62) Oblique fracture

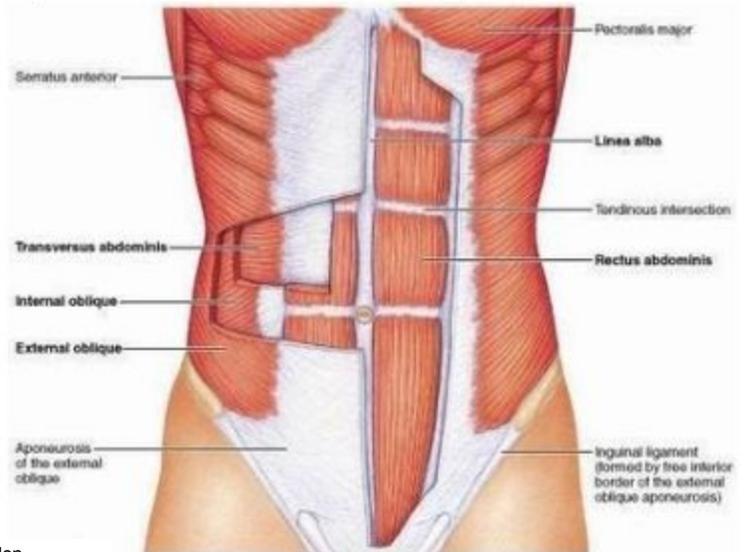
63) Linear fracture

64) Oblique fracture of the sternum

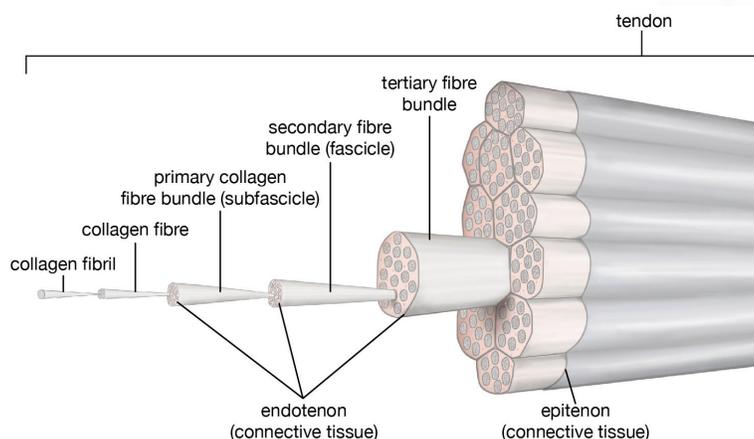
65) Osteosarcoma

66) Spinal stenosis

67)



68)



- 69) D
- 70) B
- 71) A
- 72) A
- 73) BCD
- 74) C
- 75) A
- 76) C
- 77) A
- 78) B
- 79) A
- 80) C
- 81) A
- 82) B
- 83) A
- 84) B
- 85) B
- 86) B
- 87) D
- 88) C
- 89) C
- 90) B
- 91) D
- 92) A
- 93) C
- 94) A
- 95) D
- 96) Concentric
- 97) Isometric
- 98) Eccentric
- 99) Isometric
- 100) Isometric
- 101) Isometric

Tie breakers:

- A. anterior cruciate ligament, medial collateral ligament, and meniscus
- B. Magnetic resonance imaging
- C. ATPase breaks down ATP into ADP and frees phosphate ions