Spooky Scary Skeletons & Body Systems

SCORING RUBRIC

353 / 353

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Instructions:

- This scoring rubric was used to grade the google forms. Outlines of all questions are inside of here.
    - Questions that were manually graded have corresponding notes/rubrics
- **Do NOT** open this scoring rubric until you've finished the exam.
- **Good luck! Have fun, feedback is greatly appreciated** (PM *Mr.Epithelium* on Scioly or Discord)
- We hope that this serves as an enjoyable/fair PseudoNats test.
- Stay safe during the pandemic! 😊

Scoring

Misspelled answers were counted correct as long as the word didn't lose its meaning

Multiple Choice
Questions that had multiple answers were all or none

Short Answer
Acceptable forms of answers (plural, extra identifiers, etc.) were counted correct.

Labeling
Acceptable forms of answers (plural, extra identifiers, etc.) were counted correct.

Pathology: Identification
Acceptable forms of answers (plural, extra identifiers, etc.) were counted correct.

Pathology: Case Study
Acceptable forms of answers (plural, extra identifiers, etc.) were counted correct.
Long responses were graded with a rubric

Data Analysis
Acceptable forms of answers (plural, extra identifiers, etc.) were counted correct.
Long responses were graded with a rubric

Tiebreakers

Tiebreaker#	Part	Section	Question #
- Tiebreaker#1	Part I	Data Analysis	40.
- Tiebreaker#2	Part III	Data Analysis	38.
- Tiebreaker#3	Part II	Data Analysis	37.
- Tiebreaker#4	Part I	Multiple Choice	14.
- Tiebreaker#5	Part II	Pathology; Case Study	33.

Part I Integumentary System

Multiple Choice

1. AB
2. A
3. C
4. C
5. BCF
6. D
7. C
8. A
9. AD
10. BD
11. E
12. BD
13. C
14. BCE
15. B

Short Answer

16. Keratinocyte
17. Fibroblast
18. Hemoglobin
19. Jaundice
20. Bedsore / pressure ulcer
21. Hemidesmosome
22. Eumelanin
23. Merocrine
24. IV (Four)
25. Mucous
26. Anagen
27. Hair follicle / hair bulb / hair papilla

Labeling

28.

Label 1 Nail matrix
Label 2 Nail root
Label 3 Proximal nail fold
Label 4 Eponychium (cuticle)
Label 5 Nail body / nail plate
Label 6 Nail bed
Label 7 Free edge
Label 8 Hyponychium

a. 257
b. 7
c. 3468

29.

Label A Epidermis
Label B apocrine sweat gland / sweat gland (some ambiguity)
Label C Dermis
Label D Reticular dermis (dense irregular connective tissue)
Label E Hypodermis
Label F Adipocyte (Adipose tissue)
Label G Stratum corneum
Label H Stratum granulosum
Label I Stratum spinosum
Label J Stratum basale
Label K Dermal papilla / papillary dermis
Label L collagen fibers / dense irregular connective tissue / elastic fibers (note: label D was the reticular layer of the dermis)
Label M Hair follicle
Label N Sebaceous gland
Label O Arrector pili

a. Cuticle, Cortex, Medulla
b. F
c. N
d. BN
e. thin

30. Psoriasis

a. Plaque
b. Immune cells attacking skin cells, causing overproduction of cells / autoimmunity

c. True

31. Scabies

a. Stratum corneum / epidermis

b. Infection with *sarcoptes scabei* (mite)

c. Creams/lotion (topical applications)

Pathology: Case Study

32. B

33. Squamous cell carcinoma

34. A

35. I

Data Analysis

36.

a. Keratin (+2 for keratinocyte, +3 for keratin)

b. +1 for skin, +2 for epidermis, +3 for stratum granulosum

c. Nucleus (+0 for any other answer, +2 for identifying nucleus)

37. A

38. They are clear / contain keratin (contain acidic amino acids in the protein structure which is stained by H & E)

39. Around 11±3 μm

40. AVG (+1)

Specific Evidence (+2)

- Anything related to rows B and C (especially charts)

Part II Skeletal System

Multiple Choice

1. B
2. B
3. D
4. ACD
5. D
6. B
7. ACD
8. CE
9. AD
10. AC
11. AC
12. ABC
13. D
14. C
15. F

Short Answer

16. Frontal, occipital, parietal, temporal

- **a.** Irregular, flat
- **b.** Mental / mandibular

17. Synovial (also accepted hinge, more specificity)

- **a.** Multiaxial (also accepted Uniaxial (for hinge) and flexion/extension)
- **b.** BD (+1 each)

18.

Osteoblast	(+1)	Function	(+1)
Osteoclast	(+1)	Function	(+1)
Osteogenic cells	(+1)	Function	(+1)
Osteocytes	(+1)	Function	(+1)

19. Elastic

20. Fissure

21. Endochondral, Intramembranous

22. Hinge / uniaxial

23. Plane / gliding

24. Hinge / uniaxial

25. Ball and socket

26.

Bone A	Ulna
Bone B	Clavicle (or collarbone)
Bone C	Temporal bone
Bone D	Ethmoid
Bone E	1st metacarpal
Bone F	axis

- **a.** Perpendicular plate
- **b.** Crista galli
- **c.** Conoid tubercle
- **d.** costoclavicular
- **e.** irregular
- **f.**

Bone A	Right
Bone B	Right
Bone C	Left
Bone E	Left

Labeling

27.

Label 1 Humerus
Label 8 radius
Label 9 ulna
Label 3 lateral epicondyle
Label 4 olecranon
Label 6 head of radius
Label 7 neck of radius

28.

Label 1 epiphysis
Label 2 Metaphysis
Label 3 diaphysis
Label 4 Metaphysis
Label 5 Epiphysis
Label 6 articular cartilage / hyaline cartilage
Label 7 spongy bone / red bone marrow
Label 8 epiphyseal line / epiphyseal plate
Label 9 red bone marrow / spongy bone
Label 10 medullary cavity / compact bone / endosteum
Label 11 compact bone / periosteum
Label 12 medullary cavity / compact bone / endosteum
Label 13 yellow bone marrow
Label 14 periosteum
Label 15 nutrient artery / blood vessel / artery
Label 16 articular cartilage / hyaline cartilage

a. Femur
b. Cartilaginous
c. Synchondrosis

29.

a.

Label A	Vertebral arch
Label B	Laminae, lamina
Label C	pedicle
Label D	spinous process
Label E	transverse process
Label F	superior articular facet
Label G	vertebral foramen, foramen
Label H	Body, vertebral body

b. Bifid (spinous process)

c. Lumbar

d. Cervical

e. Thoracic

Pathology: Identification

30. Achondroplasia

- **a.** Trident finger
- **b.** There is no prevention
- **c.** False

31. Scoliosis

- **a.** True
- **b.** X-ray
- **c.** Girls

Pathology: Case Study

32. Oblique fracture

33. ABC

34. B

35. C

Data Analysis

36.

- **a.** Line A
- **b.** Line B

37. No (+1), volume increases (size) as one ages (+1), which means that at the same bone mass (+1) density will be less at age 100.

38. Genes, nutrition, hormones (related to hormones), physical activity, answers vary.

39. Menopause (drop in estrogen levels)

40.

- **a.** ~20 AND ~55 ±5
- **b.** ~20 AND ~80
- **c.** ~30 (late 20s) ±5

Part III Muscular System

Multiple Choice

1. B
2. C
3. A
4. AB
5. B
6. BCD
7. D
8. AC
9. E
10. BDG
11. ACF
12. C
13. D
14. CDEG
15. D

Short Answer

16. Excitation contraction coupling
17. Type IIb, White, glycolytic, fast glycolytic
18. Eccentric
19. Synaptic
20. Motor unit
21. 2 terminal cisternae and a t-tubule
    a. An action potential travels across the sarcolemma and down a t-tubule (+1).
    This action potential opens voltage gated ion channels in the T tubules (+1),
    activating calcium channels in the SR, releasing calcium into the sarcoplasm (+1).

22.

Muscle Pectoralis major
Insertion **Crest of greater tubercle and lateral lip of intertubercular groove of humerus**

23.

Origin **Pubis, around pubic symphysis**
Action **Depresses ribs, flexes vertebral column, compresses abdomen**

24.

Muscle **Zygomaticus Major**
Action **Retracts & elevates corner of mouth**

25.

Muscle **Semitendinosus**
Origin **ischial tuberosity**

26.

Insertion **iliotibial tract**
Action **flexion/medial rotation at hip, tenses fasciae latae (supports knee)**

Labeling

27.

Label A orbicularis oculi
Label B Buccinator
Label C Orbicularis oris
Label D Trapezius
Label E Sternocleidomastoid
Label F Masseter
Label G Occipitalis
Label H Frontalis
Label I (epicranial or galeal) aponeurosis / galea aponeuroticai
Label J occipitofrontalis

a. C
b. F
c. False

28.

Label A Sternocleidomastoid
Label B Trapezius
Label C Deltoid
Label D Latissimus dorsi
Label E Triceps brachii
Label F Teres major
Label G Infraspinatus

a.

Bone X: Ulna
Bone Y: Scapula
Bone Z: 1st rib

b. CEFG
c. BC
d. BD

29. Epimysium

Label 1 Tendon
Label 2 Epimysium
Label 3 Muscle/belly
Label 4 Perimysium/fascicle
Label 5 muscle fibers/cells/endomysium
Label 6 Fascicle
Label 7 endomysium
Label 8 sarcolemma
Label 9 muscle fibers/cells
Label 10 myofibril
Label 11 Thick filament/myosin
Label 12 I band
Label 13 A band
Label 14 H zone
Label 15 Z disc
Label 16 H zone
Label 17 M line
Label 18 Thin filament/actin
Label 19 Sarcomere

Pathology: Identification

30. Myositis
- **a.** Ossificans
- **b.** True
- **c.** Muscle weakness

31. Myasthenia gravis
- **a.** Congenital
- **b.** Thymus
- **c.** Suppress

Pathology: Case Study

32. A

33. Joel works a demanding job, causing repetitive tears that cause scar tissue to build up.

34. Myositis

35. +2 for muscle spindle ONLY
+1 for muscle spindle with any other incorrect answer (e.g. golgi tendon)
+0 for any other answer without muscle spindle

Data Analysis

36. ~170 N

37. ~20 ms

38. SO

39. A

40. C