

Name: _____

Date: _____

Warm-Up: Bone Structure & Formation (pp 137-141)

Multiple Choice: *Identify the choice that best completes the statement or answers the question.*

- _____ 1. The factor(s) that determine *where* bone matrix is to be remodeled is (are):
- Ⓐ sex hormones
 - Ⓑ growth hormone
 - Ⓒ stresses of gravity and muscle pull on the skeleton
 - Ⓓ parathyroid hormone (PTH)
 - Ⓔ calcium level of the blood
- _____ 2. Bone growth that occurs due to weight lifting at age 40 is most likely:
- Ⓐ endochondrial ossification
 - Ⓑ none since bones do not grow after adolescence
 - Ⓒ appositional ossification
 - Ⓓ periosteum
 - Ⓔ occurring at the epiphyseal plates

True/False: *Indicate whether the statement is true or false.*

- _____ 3. Hematopoiesis refers to the formation of blood cells within the red marrow cavities of certain bones.
- _____ 4. Articular cartilage covers the diaphysis of long bones.
- _____ 5. The arrangement of lamellae around central (Haversian) canals forms osteons.
- _____ 6. Osteoblasts respond to the parathyroid hormone (PTH).

Matching

Match the following:

- Ⓐ osteoclasts
- Ⓑ osteoblasts
- Ⓒ lacunae
- Ⓓ osteocytes
- Ⓔ epiphyseal line
- Ⓕ epiphyseal plate
- Ⓖ Sharpey's fibers
- Ⓗ lamellae
- Ⓖ canaliculi
- Ⓙ osteons

- _____ 7. Cells that can dissolve the bony matrix

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- ___ 8. Layers of calcification that are found in bone
- ___ 9. Small channels that radiate through the matrix of bone
- ___ 10. Cells that can build bony matrix
- ___ 11. Area where bone growth takes place

Essay

- 12. List and discuss the structures of a long bone.

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- 13. Explain how the anatomy of **compact bone** *differs* from that of **spongy bone**.

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- 14. Explain how bones are remodeled in response to **parathyroid hormone** (PTH).

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- 15. If 6-year-old Sarah fell and broke her femur, damaging the proximal **epiphyseal plate**, what might she expect as she grows older? What is an epiphyseal plate and why is it significant to this situation?