Chapter Fifteen
MULTIPLE CHOICE QUIZ

In the box write the letter of the choice that is the definition of the term or best answers the question. There is only one correct answer for each question.

1. Spongy, porous bone tissue is also called: ................................................
   A. Yellow bone marrow
   B. Bone fissure
   C. Compact bone
   D. Bone sinus
   E. Cancellous bone

2. Outward extension of the shoulder bone is the: ........................................
   A. Xiphoid process
   B. Acetabulum
   C. Acromion
   D. Vertebral arch
   E. Patella

3. An opening or passage in bones where blood vessels and nerves enter and leave is a: ............................
   A. Fissure
   B. Sulcus
   C. Tuberosity
   D. Foramen
   E. Fossa

4. The projection of the temporal bone is the: ..............................................
   A. Malleolus
   B. Epiphysis
   C. Xiphoid process
   D. Mastoid process
   E. Tubercle

5. Knuckle-like process at the end of a bone is called a: ................................
   A. Fontanelle
   B. Tuberosity
   C. Trochanter
   D. Xiphoid process
   E. Condyle

6. Mandible, vomer, maxilla, and zygomatic are all bones of the: ..........
   A. Face
   B. Cranium
   C. Spine
   D. Pelvis
   E. Thorax

7. Occipital, sphenoid, frontal, temporal, and ethmoid are bones of the: ........
   A. Face
   B. Cranium
   C. Spine
   D. Pelvis
   E. Thorax

8. The shaft of a long bone is called a(an): ................................................
   A. Olecranon
   B. Periosteum
   C. Osteoclast
   D. Epiphysis
   E. Diaphysis

9. Poor formation of bone:......................
   A. Osteolysis
   B. Osteodystrophy
   C. Decalcification
   D. Myelopoiesis
   E. Osteoclasis

10. Slipping or subluxation of a vertebra: ................................................
    A. Spondylitis
    B. Rachitis
    C. Kyphosis
    D. Spondylolisthesis
    E. Lordosis

11. Operation performed to relieve the symptoms of a slipped disk: ............
    A. Patellapexy
    B. Arthroscopy
    C. Osteoclasis
    D. Laminectomy
    E. Metacarpectomy

12. Lateral curvature of the spinal column:............................................
    A. Lordosis
    B. Scoliosis
    C. Kyphosis
    D. Spina bifida
    E. Pubic symphysis
13. Vitamin D deficiency leads to softening of bone, which is known as: ............................................
   A. Osteomalacia
   B. Lumbago
   C. Osteogenesis imperfecta
   D. Osteoporosis
   E. Hypercalcemia

14. Pertaining to the upper arm bone: ..................................................
   A. Humeral
   B. Tibial
   C. Radial
   D. Ulnar
   E. Carpal

15. The shoulder bone is the: ............... .............................................
   A. Patella
   B. Sternum
   C. Scapula
   D. Clavicle
   E. Vertebra

16. The smaller of the two lower leg bones is the: .............................................
   A. Calcaneus
   B. Tibia
   C. Fibula
   D. Tarsal bone
   E. Malleolus

17. Inflammation of bone and bone marrow: .............................................
   A. Osteitis fibrosa cystica
   B. Multiple myeloma
   C. Osteomyelitis
   D. Osteoporosis
   E. Osteochondroma

18. Clubfoot: .............................................
   A. Exostosis
   B. Osteogenic sarcoma
   C. Bunion
   D. Talipes
   E. Bursitis

19. A splintered or crushed bone: .............
   A. Comminuted fracture
   B. Greenstick fracture
   C. Crepitation
   D. Compression fracture
   E. Impacted fracture

20. Surgical repair of a joint: .............................................
   A. Arthroplasty
   B. Fasciectomy
   C. Achondroplasia
   D. Tenorrhaphy
   E. Arthrosis

21. Condition of stiffening and immobility of a joint: .............................................
   A. Hemarthrosis
   B. Fibrosis
   C. Bursitis
   D. Kyphosis
   E. Ankylosis

22. Chronic inflammation of bones and joints due to degenerative changes in cartilage: .............................................
   A. Ankylosing spondylitis
   B. Rheumatoid arthritis
   C. Chondromalacia
   D. Osteoarthritis
   E. Systemic lupus erythematosus

23. Inflammation of joints caused by excessive uric acid accumulation: ........
   A. Bunion
   B. Bursitis
   C. Gouty arthritis
   D. Sciatica
   E. Myositis

24. Malignant tumor of smooth muscle: .............................................
   A. Rhabdomyosarcoma
   B. Leiomyosarcoma
   C. Rhabdomyoma
   D. Leiomyoma
   E. Myorraphy

25. Wasting away (no development) of muscle: .............................................
   A. Myasthenia
   B. Myalgia
   C. Hypertrophy
   D. Atrophy
   E. Myositis
A. **Match the following terms with their meanings below:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetabulum</td>
<td>Spongy, porous bone tissue in the inner part of bone</td>
</tr>
<tr>
<td>acromion</td>
<td>Outward extension of the shoulder bone</td>
</tr>
<tr>
<td>cartilage</td>
<td>Flexible connective tissue found in the immature skeleton, epiphyseal plate, and on joint surfaces</td>
</tr>
<tr>
<td>articular</td>
<td>Cartilage articular</td>
</tr>
<tr>
<td>calcium</td>
<td>Mineral constituent of bone</td>
</tr>
<tr>
<td>cranial bones</td>
<td>Skull bones; ethmoid, frontal, occipital, parietal, sphenoid, and temporal</td>
</tr>
<tr>
<td>collagen</td>
<td>Dense connective tissue protein strands found in bone</td>
</tr>
<tr>
<td>condyle</td>
<td>Knuckle-like process at the end of a bone near a joint</td>
</tr>
<tr>
<td>cartilage articular</td>
<td>Thin layer of cartilage surrounding the bones in a joint space</td>
</tr>
<tr>
<td>cancellous bone</td>
<td>Hard, dense bone tissue usually found around the outer portion of a bone</td>
</tr>
</tbody>
</table>

B. **Match the following terms with their meanings below:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>diaphysis</td>
<td>Shallow cavity in a bone</td>
</tr>
<tr>
<td>disk (disc)</td>
<td>Shaft, or midportion of a long bone</td>
</tr>
<tr>
<td>epiphysis</td>
<td>Flat, round plate-like structure between two vertebrae</td>
</tr>
<tr>
<td>facial bones</td>
<td>Soft spot between the skull bones of an infant</td>
</tr>
<tr>
<td>fissure</td>
<td>Narrow slit-like opening in or between bones</td>
</tr>
<tr>
<td>foramen</td>
<td>Bones of the face; lacrimal, mandibular, maxillary, nasal, vomer,</td>
</tr>
<tr>
<td>foraminal</td>
<td>and zygomatic bones</td>
</tr>
<tr>
<td>haversian canals</td>
<td>Minute spaces filled with blood vessels; found in compact bone</td>
</tr>
<tr>
<td>ligament</td>
<td></td>
</tr>
<tr>
<td>malleolus</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 15  ■  VOCABULARY QUIZ: BONES  383

8. Each end of a long bone

9. Opening or passage in bones where blood vessels and nerves enter and leave

10. Rounded process on both sides of the ankle joint

11. Fibrous tissue connecting bones to other bones

C. Match the following terms with their meanings below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>manubrium</td>
<td>Upper portion of the sternum</td>
</tr>
<tr>
<td>mastoid process</td>
<td>Round projection on the temporal bone behind the ear</td>
</tr>
<tr>
<td>medullary cavity</td>
<td>Central hallowed-out area in the shaft of a long bone</td>
</tr>
<tr>
<td>metaphysis</td>
<td>Upper portion of the sternum</td>
</tr>
<tr>
<td>olecranon</td>
<td>Round projection on the temporal bone behind the ear</td>
</tr>
<tr>
<td>orthopedist</td>
<td>Medical doctor specializing in bone, joint, and muscle rehabilitation</td>
</tr>
<tr>
<td>osteoblast</td>
<td>Process of bone formation</td>
</tr>
<tr>
<td>osteoclast</td>
<td>Bone cell that absorbs and removes unwanted bone tissue</td>
</tr>
<tr>
<td>mastoid process</td>
<td>Round projection on the temporal bone behind the ear</td>
</tr>
<tr>
<td>osseous tissue</td>
<td>Central hallowed-out area in the shaft of a long bone</td>
</tr>
<tr>
<td>periosteum</td>
<td>Membrane surrounding bones</td>
</tr>
<tr>
<td>physiatrist</td>
<td>Bone cell that helps form bone tissue</td>
</tr>
</tbody>
</table>

D. Match the following terms with their meanings below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>phosphorus</td>
<td>Soft bone tissue found in cancellous bone; contains hematopoietic stem cells and blood cells</td>
</tr>
<tr>
<td>pubic symphysis</td>
<td>Supporting bundles of bony fibers in cancellous bone</td>
</tr>
<tr>
<td>red bone marrow</td>
<td>Depression in the sphenoid bone; location of the pituitary gland</td>
</tr>
<tr>
<td>sella turcica</td>
<td>Supporting bundles of bony fibers in cancellous bone</td>
</tr>
<tr>
<td>sinus</td>
<td>Depression in the sphenoid bone; location of the pituitary gland</td>
</tr>
<tr>
<td>temporomandibular joint</td>
<td>Supporting bundles of bony fibers in cancellous bone</td>
</tr>
</tbody>
</table>
4. Rounded, small process on a bone; attachment site for muscles and tendons
5. Pole-like process extending downward from the temporal bone on each side of the skull
6. Area where the two pubic bones come together in the pelvis
7. Connection on either side of the head between the temporal bone of the skull and the mandibular bone of the jaw
8. Large process at the neck of the femur
9. Mineral substance found in bones in combination with calcium
10. Hollow air cavity with a bone
11. Fibrous connective tissue connecting muscles and bones

E. Match the following terms with their meanings below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>epiphyseal plate</td>
<td>Lower, narrow portion of the sternum</td>
</tr>
<tr>
<td>ribs</td>
<td>Rounded process on bone; attachment for muscles and tendons</td>
</tr>
<tr>
<td>tuberosity</td>
<td>Twelve pairs of elongated, curved bones that form the chest wall</td>
</tr>
<tr>
<td>vertebra</td>
<td>Fatty tissue found in the medullary cavity of most adult long bones</td>
</tr>
<tr>
<td>xiphoid process</td>
<td>Individual backbone</td>
</tr>
<tr>
<td>yellow bone marrow</td>
<td>Cartilaginous area at the ends of long bones</td>
</tr>
</tbody>
</table>
A. Complete the following terms to match the definitions below; select from the following word parts:

- calc/o
- lumb/o
- spondyl/o
- kyph/o
- myel/o
- -emia
- lamin/o
- oste/o
- de-
- lord/o
- scoli/o

1. Removal of a portion of a vertebra to relieve compression on nerves: ______________________ectomy
2. Abnormal condition of exaggerated anterior curvature of the spine: ______________________osis
3. Condition of high blood calcium: hyper ______________________
4. Abnormal condition of posterior curvature of the spine: ______________________osis
5. Pertaining to the lower back: ______________________ar
6. Formation of bone marrow: ______________________poiesis
7. Inflammation of bone: ______________________itis
8. Formation of bone: ______________________genesis
9. Abnormal condition of lateral curvature of the spine: ______________________osis
10. Abnormal condition of vertebrae: ______________________osis

B. Complete the following terms to match the definitions below; select from the following word parts:

- verteb/o
- -malacia
- -tome
- -blast
- -physis
- dys-
- -clast
- -porosis
- epi-
- -listhesis
- sym-

1. Pertaining to a backbone: ______________________al
2. Abnormal development of bone: osteo ______________________
3. Immature bone cell: osteo ______________________
4. Softening of bone: osteo ______________________
5. Instrument to cut bone: osteo ______________________
6. Forward slipping of a vertebra over a lower one: spondylo ______________________
7. Bone cell that breaks down bone to remove bone tissue: osteo ______________________
8. Abnormal condition of loss of bone tissue and decrease in bone mass: osteo ______________________
9. Cartilaginous joint connecting two sections of the pubic bone: pubic ______________________
10. Each end of a long bone: ______________________physis
Chapter Fifteen
PATHOLOGY QUIZ: BONES

Name: ______________________

Match the following vocabulary terms with their meanings below:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colles fracture</td>
<td>Bony benign growth arising from the surface of bone</td>
</tr>
<tr>
<td>Comminuted fracture</td>
<td>Partially broken bone</td>
</tr>
<tr>
<td>Compression fracture</td>
<td>Break in a bone caused by disease</td>
</tr>
<tr>
<td>Crepitus</td>
<td>Partially broken bone</td>
</tr>
<tr>
<td>Ewing sarcoma</td>
<td>Common malignant tumor arising from osteoblasts</td>
</tr>
<tr>
<td>Exostosis</td>
<td>Bony benign growth arising from the surface of bone</td>
</tr>
<tr>
<td>Greenstick fracture</td>
<td>Rare, malignant tumor arising in bone; occurring in children</td>
</tr>
<tr>
<td>Impacted fracture</td>
<td>Common malignant tumor arising from osteoblasts</td>
</tr>
<tr>
<td>Osteopenia</td>
<td>Common malignant tumor arising from osteoblasts</td>
</tr>
<tr>
<td>Osteogenic sarcoma</td>
<td>Common malignant tumor arising from osteoblasts</td>
</tr>
<tr>
<td>Osteomalacia</td>
<td>Crackling sound produced when ends of bones rub against each other</td>
</tr>
<tr>
<td>Osteomyelitis</td>
<td>Bone collapses with trauma or as a result of osteoporosis</td>
</tr>
<tr>
<td>Pathologic fracture</td>
<td>Bone collapses with trauma or as a result of osteoporosis</td>
</tr>
<tr>
<td>Talipes</td>
<td>Congenital abnormality of the hindfoot (involving the talus)</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>Decrease in bone density with thinning and weakening of bone</td>
</tr>
<tr>
<td>Inflammation of bone and bone marrow secondary to infection</td>
<td>Decrease in bone density with thinning and weakening of bone</td>
</tr>
</tbody>
</table>

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### VOCABULARY QUIZ: JOINTS

**Name:** ___________________________

**Match the following vocabulary terms with their meanings below:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>articulation</td>
<td>Meniscus</td>
</tr>
<tr>
<td>articular cartilage</td>
<td>Suture joint</td>
</tr>
<tr>
<td>bursa</td>
<td>Synovial cavity</td>
</tr>
<tr>
<td>ligament</td>
<td>Synovial membrane</td>
</tr>
<tr>
<td>synovial joint</td>
<td>Synovial fluid</td>
</tr>
<tr>
<td>synovial cavity</td>
<td>Tendon</td>
</tr>
<tr>
<td>synovial membrane</td>
<td>Immovable joint between the bones of the skull</td>
</tr>
<tr>
<td>synovial fluid</td>
<td>Smooth, glistening, white tissue that covers the surface of a joint</td>
</tr>
<tr>
<td>tendon</td>
<td>Connective tissue binding bones</td>
</tr>
<tr>
<td>tendon</td>
<td>Tissue lining the synovial cavity; it produces synovial fluid</td>
</tr>
<tr>
<td>tendon</td>
<td>Connective tissue that binds muscles to bones</td>
</tr>
<tr>
<td>tendon</td>
<td>Sac of fluid near a joint</td>
</tr>
<tr>
<td>tendon</td>
<td>A freely movable joint</td>
</tr>
<tr>
<td>tendon</td>
<td>Any type of joint</td>
</tr>
<tr>
<td>tendon</td>
<td>Viscous fluid within the synovial space</td>
</tr>
<tr>
<td>tendon</td>
<td>Space between bones at a synovial joint</td>
</tr>
<tr>
<td>tendon</td>
<td>Crescent-shaped fibrocartilaginous structure in the knee</td>
</tr>
</tbody>
</table>

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Chapter Fifteen
TERMInOLOGY QUIZ: JOInTS

Complete the following terms to match the definitions below; select from the following word parts:

- ankyl/o  - ten/o  - plasia
- arthr/o  - tendin/o  - plasty
- burs/o  - desis  - rrhaphy
- chondr/o  - malacia  - stenosis
- ligament/o  - oma
- rheumat/o  - osis

1. Abnormal condition of blood in a joint: hem ____________________________
2. Narrowing of the spinal canal: spinal ____________________________
3. Surgical repair of a joint: arthro ____________________________.
4. Fusion, by surgery, of bones across a joint space: arthro ____________________________
5. Inflammation of a sac of fluid near the joint: ____________________________itis
6. Specialist in diagnosis and treatment of arthritis: ____________________________ologist
7. Inflammation of connective tissue binding muscles to bones: ____________________________itis
8. Type of dwarfism: achondro ____________________________
9. Softening of cartilage: chondro ____________________________
10. Stiffness of a joint: ____________________________ osis
11. Suture of a tendon: teno ____________________________
12. Pertaining to the connective tissue that binds bones to bones: ____________________________ ous
A. Match the following vocabulary terms with their meanings below:

ankylosing spondylitis
gouty arthritis
rheumatoid arthritis
bunion
herniation of an intervertebral disk
sprain
carpal tunnel syndrome
Lyme disease
systemic lupus erythematosus
dislocation
osteoarthritis
ganglion

1. Progressive, degenerative joint disease with loss of articular cartilage and hypertrophy of bone ____________________________

2. Chronic, progressive arthritis with stiffening of joints, primarily of the spine ____________________________

3. Trauma to joint ligaments without rupture ____________________________

4. Disorder marked by arthritis, myalgia, malaise; cause is a bacterium carried by a tick ____________________________

5. Chronic, inflammatory autoimmune disease involving joints, skin, kidneys, nervous system, heart and lungs; butterfly rash on the face is typical ____________________________

6. Fluid-filled cyst arising from the joint capsules or tendons in the hand ____________________________

7. Inflammatory, painful swelling of joints caused by excessive uric acid in the body ____________________________

8. Chronic joint condition with inflammation and pain; caused by an autoimmune reaction against joint tissue, particularly the synovial membrane ____________________________

9. Enlargement of bone or tissue around the joint at the base of the big toe ____________________________

10. Displacement of a bone from its joint ____________________________

11. Compression of the median nerve as it passes between the ligament and the bones and tendons of the wrist ____________________________

12. Abnormal protrusion of cartilaginous tissue into the spinal canal or spinal nerves ____________________________

Name: ____________________________
B. Match the following vocabulary terms with their meanings below:

hyperuricemia  pyrexia
laminectomy  sciatica
podagra  subluxation

1. High levels of uric acid in the blood
2. Removal of a portion of a vertebra to relieve pain from a herniated disk
3. Pain in the big toe caused by collection of uric acid crystals
4. Pain radiating down the leg due to herniated disk
5. Partial or incomplete dislocation of a joint
6. Fever
Name: __________________________

**VOCABULARY QUIZ: MUSCLES**

*Match the following vocabulary terms with their meanings below:*

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>abduction</td>
<td>Bending a muscle, a limb</td>
</tr>
<tr>
<td>adduction</td>
<td>Movement away from the midline of the body</td>
</tr>
<tr>
<td>dorsiflexion</td>
<td>Bending the foot upward (backward)</td>
</tr>
<tr>
<td>extension</td>
<td>Connection of a muscle to a stationary bone</td>
</tr>
<tr>
<td>fascia</td>
<td>Circular movement around a central point (axis)</td>
</tr>
<tr>
<td>flexion</td>
<td>Connection of a muscle to a bone that moves</td>
</tr>
<tr>
<td>origin of a muscle</td>
<td>Muscle connected to internal organs; involuntary or smooth muscle</td>
</tr>
<tr>
<td>insertion of a muscle</td>
<td>Muscle connected to bones; striated or voluntary muscle</td>
</tr>
<tr>
<td>pronation</td>
<td>Turning the palm of the hand downward</td>
</tr>
<tr>
<td>supination</td>
<td>Turning the palm of the hand upward</td>
</tr>
<tr>
<td>rotation</td>
<td>Straightening of a flexed limb</td>
</tr>
<tr>
<td>flexor</td>
<td>Turning the palm of the hand upward</td>
</tr>
<tr>
<td>origin of a muscle</td>
<td>Muscle connected to internal organs; involuntary or smooth muscle</td>
</tr>
<tr>
<td>fascia</td>
<td>Fibrous membrane separating and enveloping muscles</td>
</tr>
</tbody>
</table>

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Complete the following terms to match the definitions below; select from the following word parts:

- fasci/o
- rhabdomy/o
- a-
- fibr/o
- sarc/o
- ab-
- leiomy/o
- -asthenia
- ad-
- my/o
- -itis
- dorsi-
- myocardi/o
- -oma
- dys-
- -oma
- -penia
- hyper-
- plant/o
- -trophy
- poly-

1. Inflammation of muscle: _______________________________itis
2. Incision into the sheath enveloping muscles: _______________________________tomy
3. Malignant tumor of skeletal muscle: _______________________________oma
4. Pain of muscle and fibrous tissue: _______________________________algia
5. Benign tumor of visceral muscle: _______________________________oma
6. Lack of development (in muscles): _______________________________
7. Condition of lack of muscle strength: _______________________________ gravis
8. Carrying or leading away from the body: _______________________________duction
9. Excessive development (in muscles): _______________________________trophy
10. Pertaining to bending the sole of the foot downward: _______________________________ar flexion
11. Bending the foot backward: _______________________________flexion
12. Pertaining to heart muscle: _______________________________al
13. Group of inherited diseases characterized by progressive weakness and degeneration of muscle fibers without involvement of the nervous system: muscular _______________________________
14. Chronic inflammatory myopathy (many muscles): _______________________________itis
15. Deficiency of muscle (flesh): sarco _______________________________
A. Match the following tests with the definitions below:

<table>
<thead>
<tr>
<th>Test</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>antinuclear antibody test</td>
<td>Measurement in blood of a substance present in serum of patients with SLE</td>
</tr>
<tr>
<td>erythrocyte sedimentation</td>
<td>Measurement in blood of a substance associated with gouty arthritis</td>
</tr>
<tr>
<td>rate</td>
<td>Time it takes for red blood cells to settle to the bottom of a test tube</td>
</tr>
<tr>
<td>rheumatoid factor test</td>
<td>Measurement of an enzyme in serum as an indicator of muscle disease or injury</td>
</tr>
<tr>
<td>uric acid test</td>
<td></td>
</tr>
</tbody>
</table>

B. Match the following procedures with the explanations below:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>arthrocentesis</td>
<td>Visual examination of a joint with an endoscope and camera</td>
</tr>
<tr>
<td>arthroscopy</td>
<td>Surgical puncture to remove fluid from a joint</td>
</tr>
<tr>
<td>CT</td>
<td>X-ray beam and computer provides cross-sectional and other images of soft tissue and bone</td>
</tr>
<tr>
<td>MRI</td>
<td>Use of a magnetic field to create images of soft tissue in the body</td>
</tr>
<tr>
<td>muscle biopsy</td>
<td>X-ray images are taken after injection of contrast material into the joint</td>
</tr>
<tr>
<td>arthrography</td>
<td>X-ray examination of an intervertebral disk after injection of contrast into the nucleus pulposus</td>
</tr>
<tr>
<td>arthroplasty</td>
<td>Removal of muscle tissue for microscopic examination</td>
</tr>
<tr>
<td>bone density test</td>
<td>Uptake of radioactive substance is measured in bone</td>
</tr>
<tr>
<td>biopsy</td>
<td>Recording the strength of muscle contraction as a result of electrical stimulation</td>
</tr>
<tr>
<td>diskography</td>
<td>Low-energy x-ray absorption in bones is used to measure bone mass</td>
</tr>
<tr>
<td>electromyography</td>
<td>Surgical repair or replacement of a joint</td>
</tr>
</tbody>
</table>
ABBREVIATIONS QUIZ

Name: __________________________

A. On the line provided, give meanings for the following abbreviations, then write each abbreviation next to its explanation below:

1. AC  _____________________________________________________________
2. ACL  ___________________________________________________________
3. ANA  ___________________________________________________________
4. C1-C7  _________________________________________________________
5. Ca  _____________________________________________________________
6. CK  _____________________________________________________________
7. CMC  ___________________________________________________________
8. CTS  ____________________________________________________________
9. DEXA  _________________________________________________________
10. DMARD  _______________________________________________________

a. _______ Mineral constituent of bone  
   b. _______ Connective tissue in the knee  
   c. _______ Compression of the median nerve in the wrist  
   d. _______ Medications used to treat a type of arthritis  
   e. _______ Shoulder joint  
   f. _______ Enzyme elevated in muscle disease  
   g. _______ Indicator of SLE  
   h. _______ Backbones in the neck  
   i. _______ Provides evidence for osteopenia and osteoporosis  
   j. _______ Wrist joint
B. **On the line provided, give meanings for the following abbreviations, then write each abbreviation next to its explanation below:**

1. **DO**
2. **DTRs**
3. **EMG**
4. **ESR**
5. **HNP**
6. **IM**
7. **L1-L5**
8. **NSAID**
9. **OA**
10. **ORIF**
11. **Ortho**

   a. _______ Professional who treats medical conditions and performs surgery
   b. _______ Speed at which RBCs settle out of blood
   c. _______ Pertaining to within muscles
   d. _______ Prescribed to treat musculoskeletal disorders
   e. _______ Bulging of the inner section of an intervertebral disk
   f. _______ Measurement of connective tissue (tendon) movement, as indicator of nerve and muscle strength
   g. _______ Vertebrae in the lower back
   h. _______ Electrical measurement of muscle functioning
   i. _______ Repair of a broken bone
   j. _______ Branch of medicine dealing with evaluation and treatment of musculoskeletal disorders
   k. _______ Condition in which articular cartilage wears away and joint replacement may be necessary
### Abbreviations Quiz

C. On the line provided, give meanings for the following abbreviations, then write each abbreviation next to its explanation below:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OT</td>
<td>Vertebrae in the area of the chest</td>
</tr>
<tr>
<td>P</td>
<td>Helps patients regain use of muscles and joints after injury or surgery</td>
</tr>
<tr>
<td>PT</td>
<td>Replacement of the patellar joint</td>
</tr>
<tr>
<td>RA</td>
<td>Assessment of flexibility of a joint</td>
</tr>
<tr>
<td>RF</td>
<td>Mineral element in bone</td>
</tr>
<tr>
<td>ROM</td>
<td>Autoimmune condition affecting skin, joints, and internal organs</td>
</tr>
<tr>
<td>T1-T12</td>
<td>Replacement of the pelvic joint</td>
</tr>
<tr>
<td>TKR</td>
<td>Antibody associated with a type of arthritis</td>
</tr>
<tr>
<td>THR</td>
<td>Joint between the skull and the lower jaw bone</td>
</tr>
<tr>
<td>TMJ</td>
<td>Chronic type of arthritis marked by swelling and inflammation of joints</td>
</tr>
<tr>
<td>OT</td>
<td>Treatment that helps patients perform activities of daily living and function in work-related situations</td>
</tr>
</tbody>
</table>
EXERCISE QUIZ

PART I: BONES

A. Complete the following sentences:

1. Two mineral substances necessary for proper development of bones are _________
   and _________.

2. The shaft of a long bone is called the _________.

3. The ends of a long bone are called the _________.

4. The bones of a fetus are mainly composed of ________ tissue.

5. During bone development, immature bone cells called ________ produce bony tissue.

6. Red bone marrow is found in spongy or ________ bone.

7. The strong membrane surrounding the surface of a bone is the ________.

8. Hard, dense bone tissue lying under the periosteum is called ________.

9. The physician who treats bones and bone diseases is a(an) ________.

10. Series of bone canals containing blood vessels are the ________.

11. A medical doctor who specializes in restoring patients to functional activities after injuries to bones, nerves, and muscles is ________.

B. Match the following cranial and facial bones with their meanings:

- frontal bone
- lacrimal bone
- mandible
- maxilla
- occipital bone
- parietal bone
- temporal bone
- zygomatic bone

12. Forms the forehead ________

13. Cheek bone ________

14. Upper jaw bone ________

15. Forms the back and base of the skull ________

16. Lower jaw bone ________

17. Forms the roof and upper side of the skull ________

18. Two paired bones at the corner of each eye ________

19. Bone near the ear; connected to the lower jaw ________
C. Give the medical names for the following bones:

20. shoulder bone ____________________ 25. collarbone ____________________
21. upper arm bone ____________________ 26. wrist bones ____________________
22. breastbone ________________________ 27. kneecap ________________________
23. thigh bone ________________________ 28. foot bones ______________________
24. finger bones ______________________ 29. backbone ______________________

D. Give the meanings for the following terms associated with bones:

30. calcaneus ________________________
31. acetabulum ______________________
32. acromion ________________________
33. malleolus ________________________
34. lamina _________________________
35. olecranon _______________________
36. pubic symphysis __________________
37. osteoporosis ____________________
38. osteogenic sarcoma _______________

E. Match the following terms with their descriptions:

exostoses scoliosis
kyphosis spondylolisthesis
lordosis talipes
myelopoiesis

39. Lateral curvature of the spine _________________________
40. Formation of bone marrow _________________________
41. Abnormal anterior curvature of the spine _______________________
42. Benign tumors arising from the bone surface _______________________
43. Humpback _________________________
44. Clubfoot ________________________
45. Subluxation of a vertebra _________________________

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PART II: JOINTS AND MUSCLES

A. Complete the following sentences:

1. Connective tissue that binds bones to other bones is a(an) ______________________
2. Connective tissue that binds muscles to bones is a(an) ______________________
3. Fluid found within the joint is called ______________________
4. A sac of fluid near a joint is a(an) ______________________
5. Smooth cartilage that surrounds the surface of bones at joints is ______________________
6. Surgical repair of a joint is called ______________________

B. Complete the medical term from its meaning and word parts given:

7. inflammation of a tendon: ______________________ itis
8. doctor specializing in joint disorders: ______________________ logist
9. tumor (benign) of cartilage: ______________________ oma
10. incision of a joint: arthr ______________________
11. stiffened, immobile joint: ______________________ osis
12. suture of a tendon: ten ______________________
13. softening of cartilage: chondro ______________________
14. tumor (malignant) of cartilage: ______________________ oma
15. inflammation of a sac of fluid near a joint: ______________________ itis

C. Give meanings for the following terms:

16. subluxation ______________________
17. arthrodesis ______________________
18. podagra ______________________
19. pyrexia ______________________
20. sciatica ______________________
D. Select the term that best fits the definition given.

21. fibrous membrane separating muscles: (fascia, flexion)
22. movement away from the midline: (abduction, adduction)
23. pertaining to heart muscle: (myasthenia, myocardial)
24. pain of many muscles: (myositis, polymyalgia)
25. act of turning the palm forward or upward: (supination, pronation)
26. muscle connected to internal organs: (skeletal, visceral)
27. connection of muscle to the bone that moves: (origin, insertion)
28. connection of muscle to a stationary bone: (origin, insertion)

E. Select from the following terms to name the abnormal conditions described below:

achondroplasia
dislocation
ankylosing spondylitis
osteoarthritis
bunion
ganglion
carpal tunnel syndrome
gouty arthritis
lyme disease
systemic lupus erythematosus

29. An inherited condition in which bones of the arms and legs fail to grow normally because of a
    defect in cartilage and bone formation

30. Cystic mass arising from a tendon in the wrist

31. Inflammation of joints caused by accumulation of uric acid

32. Degenerative joint disease; chronic inflammation of bones and joints

33. Chronic, progressive arthritis with stiffening of joints,
    especially of the spine

34. Compression of the median nerve in the wrist

35. Abnormal swelling of a metatarsophalangeal joint

36. Tick-borne bacterium causes this type of arthritis

37. Chronic joint disease with inflamed and painful joints; marked by swollen and thickened
    synovial membranes

38. Chronic inflammatory disease affecting skin (red rash on the face), kidneys, heart, and lungs
    as well as joints

39. Displacement of a bone from its joint
F. Give the meanings for the following abnormal conditions affecting muscles:

40. fibromyalgia
41. leiomyosarcoma
42. muscular dystrophy
43. polymyositis
44. fasciitis

G. Match the term in Column I with its meaning in Column II.

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
</tr>
</thead>
<tbody>
<tr>
<td>45. extension</td>
<td>A. Bending a limb</td>
</tr>
<tr>
<td>46. rotation</td>
<td>B. Movement away from the midline</td>
</tr>
<tr>
<td>47. flexion</td>
<td>C. Movement toward the midline</td>
</tr>
<tr>
<td>48. adduction</td>
<td>D. Circular movement around an axis</td>
</tr>
<tr>
<td>49. pronation</td>
<td>E. Straightening out a limb</td>
</tr>
<tr>
<td>50. abduction</td>
<td>F. Turning the palm backward</td>
</tr>
</tbody>
</table>
Chapter Fifteen

DICTATION AND COMPREHENSION QUIZ: BONES

Name: ____________________________

A. Dictation of Terms

1. ____________________________
2. ____________________________
3. ____________________________
4. ____________________________
5. ____________________________
6. ____________________________
7. ____________________________
8. ____________________________
9. ____________________________
10. ____________________________

11. ____________________________
12. ____________________________
13. ____________________________
14. ____________________________
15. ____________________________
16. ____________________________
17. ____________________________
18. ____________________________
19. ____________________________
20. ____________________________

B. Comprehension of Terms: Match number of the above term with its meaning below.

_____ Lateral curvature of the spinal column
_____ Bat-shaped cranial bone behind the eyes
_____ Large process below the neck of the femur
_____ End of a long bone
_____ Flexible connective tissue at joints
_____ Bone break at the wrist
_____ Round process on both sides of ankle
_____ Forms the back and base of the skull
_____ Poor development of bone
_____ Pertaining to the smaller lower leg bone
_____ Hip socket
_____ Thin, delicate cranial bone; supports the nasal cavity
_____ Formation of bone marrow
_____ Malignant bone tumor
_____ Upper part of the hip bone
_____ Forward vertebral subluxation
_____ Bone is splintered or crushed
_____ Heel bone
_____ Elbow bone
_____ Clubfoot

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Chapter Fifteen

DICTATION AND COMPREHENSION QUIZ: JOINTS AND MUSCLES

Name: __________________________

A. Dictation of Terms

1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________
6. __________________________
7. __________________________
8. __________________________
9. __________________________
10. __________________________
11. __________________________
12. __________________________
13. __________________________
14. __________________________
15. __________________________
16. __________________________
17. __________________________
18. __________________________
19. __________________________
20. __________________________

B. Comprehension of Terms: Match number of the above term with its meaning below.

_____ Process of recording the electrical activity of muscles
_____ Chronic, progressive arthritis with stiffening of joints (primarily the spine)
_____ Bones are fused across the joint space
_____ Inflammation of the tissue connecting bones and muscles
_____ Bones of the arms and legs fail to grow to normal size (defect in cartilage formation)
_____ Bending of the foot backward (upward)
_____ Act of turning the palm forward
_____ Movement away from the midline of the body
_____ Inflammation of the membrane lining the joint
_____ Malignant tumor of smooth muscle
_____ Trauma to a muscle from violent contraction or excessive stretching
_____ Inflammation of many muscles
_____ Trauma to a joint due to injury to ligaments
_____ Fever
_____ Blood condition found in gouty arthritis
_____ Malignant tumor of skeletal muscle
_____ Chronic disease of joint inflammation (primarily the small joints of the hands and feet); an autoimmune reaction
_____ Abnormal swelling of the metatarsophalangeal joint
_____ Sac of fluid near a joint
_____ Extreme pain of the big toe associated with gouty arthritis
Chapter Fifteen

SPELLING QUIZ

Name: ________________________________

A. Circle the term that is spelled correctly, and write its meaning in the space provided:

1. arthrocentesis arthrosentesis ________________________________
2. osteoporosis osteoporosis ________________________________
3. cartilage cartiledge ________________________________
4. atrophy atropy ________________________________
5. chondrocostal chrondrocostal ________________________________
6. scoliosis scoleosis ________________________________
7. Ewing sarcoma Uwing sarcoma ________________________________
8. osteomyelitis osteomyleitis ________________________________
9. acetabulum ascetabulum ________________________________
10. osteodystrophy osteodystropy ________________________________

B. Circle the term that is spelled correctly. The meaning of each term is given.

11. Upper arm bone ......................................... humerus humerus humorous
12. Thigh bone ................................................. femor femur femmur
13. End of a long bone ..................................... epiphysis epiphisis epiphifisis
14. Humpback .................................................. kyphiosis kiphosis kyphosis
15. Heel bone ................................................... calcaneus calcaneous calcaineus
16. Finger or toe bones ................................... phalanges pharynges plalanges
17. Collarbone .................................................. klavical klavicle clavicle
18. Kneecap ...................................................... patella petella patela
19. Larger lower leg bone ................................ tibia tibea tibia
20. Mineral substance in bone ........................ phosphorus phosphorous phospherus
Chapter Fifteen

PRONUNCIATION QUIZ

Name: ________________________________

A. Underline the accented syllables in the following terms:

1. acetabulum  4. scapular  7. fibromyalgia  10. rheumatologist
2. osteodystrophy  5. kyphosis  8. phalanges
3. epiphysis  6. malleolus  9. podagra

B. Match the term in Column I with its meaning in Column II:

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ulna</td>
<td>A. Collarbone</td>
</tr>
<tr>
<td>2. ilium</td>
<td>B. Larger of the two lower leg bones</td>
</tr>
<tr>
<td>3. diaphysis</td>
<td>C. Upper part of the hip bone</td>
</tr>
<tr>
<td>4. clavicle</td>
<td>D. Lower arm bone</td>
</tr>
<tr>
<td>5. bursa</td>
<td>E. Condition of anterior curvature of the spine</td>
</tr>
<tr>
<td>6. lordosis</td>
<td>F. The elbow</td>
</tr>
<tr>
<td>7. fibula</td>
<td>G. Sac of fluid near joints</td>
</tr>
<tr>
<td>8. tibia</td>
<td>H. The shaft of a long bone</td>
</tr>
<tr>
<td>9. olecranon</td>
<td>I. A foot bone</td>
</tr>
<tr>
<td>10. metatarsal</td>
<td>J. Smaller of the two leg bones</td>
</tr>
</tbody>
</table>

C. Complete the following terms using the definitions given:

1. teno_________________________ Suture of a tendon
2. ___________________________pexy Fixation of the kneecap
3. ___________________________al Pertaining to the heel bone
4. ___________________________oma Tumor (benign) of smooth, visceral muscle
5. ___________________________emia High levels of blood calcium
6. ___________________________.itis Inflammation of bone and bone marrow
7. ___________________________osis Lateral curvature of the spine
8. osteo_________________________ Malignant bone tumor
9. ___________________________ing Inflammation of the backbone with stiffness in the joints (2 words)
   ___________________________ itis
Label the diagram below using the terms listed below:

Articular cartilage  Epiphysis
Cancellous bone  Haversian canals
Compact cortical bone  Medullary cavity
Diaphysis  Metaphysis
Epiphyseal plate (line)  Periosteum

Periosteum
Cancellous bone (spongy or trabecular bone)
Compact bone

containing yellow bone marrow
Chapter Fifteen
REVIEW SHEET QUIZ

Name: ____________________________

A. Give meanings for the following combining forms:
   1. acetabul/o ______________________  6. calc/o __________________________
   2. ankyl/o __________________________  7. calcane/o ______________________
   3. arthr/o __________________________  8. carp/o ________________________
   4. articul/o _________________________  9. cervic/o ______________________
   5. burs/o __________________________  10. chondr/o ______________________

B. Give combining forms for the following meanings:
   1. collarbone ______________________  6. thigh bone _____________________
   2. tailbone _________________________  7. smooth muscle __________________
   3. ribs _____________________________  8. upper arm bone ________________
   4. skull ___________________________  9. ilium _________________________
   5. fascia __________________________  10. ischium ______________________

C. Give meanings for the following combining forms:
   1. kyph/o ____________________________  6. maxill/o ______________________
   2. lamin/o __________________________  7. metacarp/o __________________
   3. lord/o ___________________________  8. metatars/o ____________________
   4. lumb/o __________________________  9. my/o _________________________
   5. malleol/o ________________________  10. myel/o ________________________
D. Give meanings for the following combining forms:

1. myos/o
2. olecran/o
3. orth/o
4. oste/o
5. patell/o
6. perone/o
7. phalang/o
8. vertebro/o
9. rhabdomy/o
10. spondyl/o

E. Give combining forms for the following meanings:

1. sacrum
2. flesh
3. shoulder blade
4. crooked, bent (lateral curvature of spine)
5. breast bone
6. chest
7. larger lower leg bone
8. lower arm bone (little finger side)
9. lower arm bone (thumb side)
10. lower jaw bone
F. Give meanings for the following suffixes:

1. -algia
2. -asthenia
3. -blast
4. -clast
5. -desis
6. -emia
7. -listhesis
8. -malacia
9. -penia
10. -plasty
11. -porosis
12. -stenosis
13. -tome
14. -tome

G. Give meanings for the following prefixes:

1. a-, an-
2. ab-
3. ad-
4. dia-
5. dorsi-
6. epi-
7. exo-
8. meta-
9. peri-
10. poly-
11. sub-
12. supra-
Unscramble the letters to form musculoskeletal system–related terms from the clues. Use the letters in the squares to complete the bonus term.

1. **Clue:** One of the jaw bones
   
   解码后的单词为：BALMINE

2. **Clue:** One of the bones in the arm
   
   解码后的单词为：SUHEMUR

3. **Clue:** Group of bones at the tailbone of the spinal column
   
   解码后的单词为：YOCXOC

4. **Clue:** Anterior bone of the skull
   
   解码后的单词为：TRAFOLN

**BONUS TERM: Clue:** Benign tumor of smooth muscle

解码后的单词为：[填空]
Fill in the crossword puzzle below using the clues listed underneath it.

**Across Clues**

1. The process of recording the strength of muscle contraction.
2. Surgical puncture of the joint space with a needle.
3. Chronic inflammatory myopathy of uncertain etiology (inflammation of many muscles).
4. As applied to the hand, the act of turning the palm upward.
5. Trauma to a joint with pain, swelling, and injury to ligaments.
6. Rounded process on a bone; attachment for muscles and tendons.
7. Decrease in bone density; thinning and weakening a limb.
8. Progressive, degenerative joint disease characterized by loss of articular cartilage; literally, inflammation of bone and joint.
9. Decreasing the angle between two bones; bending of the bone.
10. Cavity within a bone (cranial and facial bones).
11. Displacement of a bone from its joint. For example, a shoulder ____________.
12. Connective tissue that binds muscles to bones.
13. A cystic mass arising from a tendon in the wrist.
15. Abnormal swelling of the joint between the big toe and the first metatarsal bone.
16. A partial or incomplete dislocation.
17. Clubfoot.
18. Flat, round, plate-like cartilaginous structure between vertebrae.
19. Inflammation of the bone and bone marrow.

**Down Clues**

1. Bony growth arising from the surface of bone.
2. Surgical puncture of the joint space with a needle.
3. Chronic inflammatory myopathy of uncertain etiology (inflammation of many muscles).
4. As applied to the hand, the act of turning the palm upward.
5. Trauma to a joint with pain, swelling, and injury to ligaments.
6. Rounded process on a bone; attachment for muscles and tendons.
7. Decrease in bone density; thinning and weakening a limb.
8. Progressive, degenerative joint disease characterized by loss of articular cartilage; literally, inflammation of bone and joint.
9. Decreasing the angle between two bones; bending of the bone.
10. Cavity within a bone (cranial and facial bones).
11. Displacement of a bone from its joint. For example, a shoulder ____________.
15. Abnormal swelling of the joint between the big toe and the first metatarsal bone.
A. Chart Note

The patient is having pain around the medial aspect of his left knee. About 12 years ago he had a tear of his medial meniscus (crescent-shaped fibrocartilage), which was removed. On examination, he has a well-healed medial scar to his left knee; there was no effusion; full range of motion; and it is stable. X-rays show very slight scarring of the medial femoral condyle and a small accessory bone medially, but nothing in the interior of the joint. The great toe shows a healed fracture. There was no obvious exostosis impinging on the base of the nail.

1. **Effusion in a joint means:**
   - A. The bones at the joint are broken
   - B. The meniscus is torn
   - C. The patella is fractured
   - D. There is fluid in the joint space

2. **Where is the femoral condyle?**
   - A. At the ankle joint
   - B. At the knee joint
   - C. At the distal end of the tibia
   - D. At the distal end of the fibula

3. **An exostosis is:**
   - A. A bony growth
   - B. A fluid-filled cyst
   - C. A healed fracture
   - D. Type of tendon

4. **Where is the medial meniscus?**
   - A. Near the big toe
   - B. At the hip socket
   - C. In the middle of the knee
   - D. At the base of the nail of the big toe
B. Chart Note

Follow-up for the complications of osteoporosis as they affect the spine. Mrs. Smith had a 6-month history of progressive disabling back pain visibly associated with progressive kyphotic deformity of the thoracolumbar spine, with an attendant cervical lordosis. X-rays of the thoracic spine reveal a compression fracture of T11 and L1. I advised the patient that such fractures even without trauma may be complications of underlying osteoporosis as severe as hers.

1. Which term best describes Mrs. Smith’s condition? .......................  
   A. Osteoarthritis  
   B. Gouty arthritis  
   C. Osteomalacia  
   D. Osteopenia

2. What type of spinal deformity is present?  
   A. Posterior curvature of the chest and anterior curvature of the neck  
   B. Lateral curvature of the chest  
   C. Cervical fracture  
   D. Anterior curvature of the thorax
Chapter Fifteen
ANSWERS TO THE QUIZZES

Multiple Choice Quiz

Vocabulary Quiz: Bones
A
1. cartilage
2. cranial bones
3. calcium
4. acromion
5. cancellous bone
6. acetabulum
7. collagen
8. condyle
9. articular cartilage
10. compact bone
6. pubic symphysis
7. temporomandibular joint
8. trochanter
9. phosphorus
10. sinus
11. tendons
E
1. xiphoid process
2. tuberosity
3. ribs
4. yellow bone marrow
5. vertebra
6. epiphyseal plate
B
1. fossa
2. diaphysis
3. disk (disc)
4. fontanelle
5. fissure
6. facial bones
7. haversian canals
8. epiphysis
9. foramen
10. malleolus
11. ligaments
12. ligament

C
1. ossification
2. osteoclast
3. mastoid process
4. medullary cavity
5. manubrium
6. osteoblast
7. periosteum
8. osseous tissue
9. metaphysis
10. olecranon
11. physiatrist
12. orthopedist

D
1. red bone marrow
2. trabeculae
3. sella turcica
4. tubercle
5. styloid process

Terminology Quiz: Bones
A
1. laminectomy
2. lordosis
3. hypercalcemia
4. kyphosis
5. lumbar
6. myelopoiesis
7. osteitis
8. osteogenesis
9. scoliosis
10. spondylolisthesis
B
1. vertebral
2. osteodystrophy
3. osteoblast
4. osteomalacia
5. osteotome
6. spondylodiscitis
7. osteoclast
8. osteoporosis
9. pubic symphysis
10. epiphysis

Pathology Quiz: Bones
1. exostosis
2. Ewing sarcoma
3. greenstick fracture

Pathology Quiz: Joints
A
1. osteoarthritis
2. ankylosing spondylitis
### Vocabulary Quiz: Muscles

1. flexion  
2. abduction  
3. dorsiflexion  
4. origin of a muscle  
5. rotation  
6. skeletal muscle  
7. pronation  
8. adduction  
9. plantar flexion  
10. supination  
11. extension  
12. insertion of a muscle  
13. visceral muscle  
14. fascia

### Terminology and Pathology Quiz: Muscles

1. myositis  
2. fasciomyopathy  
3. rhabdomyosarcoma  
4. fibromyalgia  
5. leiomyoma  
6. atrophy  
7. myasthenia gravis  
8. abduction  
9. hypertrophy  
10. plantar flexion  
11. dorsiflexion  
12. myocardial  
13. muscular dystrophy  
14. polymyositis  
15. sarcopenia

### Laboratory Tests and Clinical Procedures Quiz

#### A
1. serum calcium  
2. uric acid test  
3. erythrocyte sedimentation rate  
4. serum creatine kinase  
5. antinuclear antibody test  
6. rheumatoid factor test

#### B
1. arthroscopy  
2. arthrocentesis  
3. CT  
4. MRI  
5. arthrography  
6. diskography  
7. muscle biopsy  
8. bone scan  
9. electromyography  
10. bone density test  
11. arthroplasty

### Abbreviations Quiz

#### A
1. acromioclavicular joint  
2. anterior cruciate ligament  
3. antinuclear antibody  
4. cervical vertebrae  
5. calcium  
6. creatine kinase  
7. carpometacarpal  
8. carpal tunnel syndrome  
9. dual-energy x-ray absorptiometry  
10. disease-modifying antirheumatic drug

#### B
1. doctor of osteopathy  
2. deep tendon reflexes  
3. electromyography  
4. erythrocyte sedimentation rate  
5. herniated nucleus pulposus  
6. intramuscular  
7. lumbar vertebrae

### Exercise Quiz

#### Part I:

#### A
1. calcium and phosphorus  
2. diaphysis  
3. epiphyses  
4. cartilage  
5. osteoblasts  
6. cancellous  
7. periosteum  
8. compact bone  
9. orthopedist  
10. haversian canals  
11. physiatrist

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Chapter 15

ANSWERS TO THE QUIZZES

B
12. frontal bone
13. zygomatic bone
14. maxilla
15. occipital bone
16. mandible
17. parietal bone
18. lacrimal
19. temporal

C
20. scapula
21. humerus
22. sternum
23. femur
24. phalanges
25. clavicle
26. carpals
27. patella
28. metatarsals
29. vertebra

D
30. heel bone
31. socket for femur in hip
32. projection of scapula
33. rounded process at the ankle
34. part of the vertebral arch
35. elbow bone
36. anterior part of the hip bone
37. decrease in bone density; thinning and weakening of bone
38. malignant tumor of bone

E
39. scoliosis
40. myelopoiesis
41. lordosis
42. exostoses
43. kyphosis
44. talipes
45. spondylolisthesis

Part II:

A
1. ligament
2. tendon
3. synovial fluid
4. bursa
5. articular cartilage
6. arthroplasty

B
7. tendinitis
8. rheumatologist
9. chondroma
10. arthroscopy
11. ankylosis
tenorraphy
13. chondromalacia
14. chondrosarcoma
15. bursitis

C
16. partial or incomplete dislocation
17. binding of a joint
18. sharp pain of big toe; associated with gouty arthritis
19. fever
20. pain radiating down the leg

D
21. fascia
22. abduction
23. myocardial
24. polymyalgia
25. supination
26. visceral
27. insertion
28. origin

E
29. achondroplasia
30. ganglion
31. gouty arthritis
32. osteoarthritis
33. ankylosing spondylitis
34. carpal tunnel syndrome
35. bunion
36. Lyme disease
37. rheumatoid arthritis
38. systemic lupus erythematosus
39. dislocation

F
40. pain of fibrous tissue and muscle
tumor (malignant) of smooth muscle
42. poor development of muscle; group of inherited diseases with progressive muscle weakness and degeneration
43. chronic inflammation of many muscles
44. inflammation of fascia

G
45. E
46. D
47. A
48. C
49. F
50. B

Dictation and Comprehension: Bones

A
1. acetabulum
calcaneus
3. cartilage
4. Colles fracture
5. comminuted fracture
6. epiphysis
7. ethmoid bone
8. osteogenic sarcoma
9. ischiium
10. malleolus
11. myelopoiesis
12. occipital bone
13. olecranon
14. osteodystrophy
15. peroneal
16. scoliosis
17. sphenoid bone
18. spondylolisthesis
19. talipes
20. trochanter

B
16. Lateral curvature of the spinal column
17. Bat-shaped cranial bone behind the eyes
20. Large process below the neck of the femur
6. End of a long bone
3. Flexible connective tissue at joints
4. Bone break at the wrist
10. Round process on both sides of ankle
12. Forms the back and base of the skull
14. Poor development of bone
15. Pertaining to the smaller lower leg bone
1. Hip socket
7. Thin, delicate cranial bone; supports the nasal cavity
11. Formation of bone marrow
8. Malignant bone tumor
9. Upper part of the hip bone
18. Forward vertebral subluxation
5. Bone is splintered or crushed
2. Heel bone
13. Elbow bone
19. Clubfoot

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### Dictation and Comprehension: Joints and Muscles

**A**
1. abduction
2. achondroplasia
3. ankylosing spondylitis
4. arthrodesis
5. bunion
6. bursa
7. dorsiflexion
8. electromyography
9. hyperuricemia
10. leiomyosarcoma
11. podagra
12. polymyositis
13. pyrexia
14. rhabdomyosarcoma
15. rheumatoid arthritis
16. sprain
17. strain
18. supination
19. synovitis
20. tendinitis

**B**
8. Process of recording the electrical activity of muscles
3. Chronic, progressive arthritis with stiffening of joints (primarily the spine)
4. Bones are fused across the joint space
20. Inflammation of the tissue connecting bones and muscles
2. Bones of the arms and legs fail to grow to normal size (defect in cartilage formation)
7. Bending of the foot backward (upward)
18. Act of turning the palm forward
1. Movement away from the midline of the body
19. Inflammation of the membrane lining the joint
10. Malignant tumor of smooth muscle
17. Trauma to a muscle from violent contraction or excessive stretching
12. Inflammation of many muscles
16. Trauma to a joint due to injury to ligaments
13. Fever
9. Blood condition found in gouty arthritis
14. Malignant tumor of skeletal muscle

### Spelling Quiz

**A**
1. arthrocentesis—surgical puncture to remove fluid from a joint
2. osteoporosis—decrease in bone density and weakening of bone
3. cartilage—connective tissue at joints
4. arthrotomy—lack of development; shrinkage of muscle
5. chondrocostal—pertaining to rib cartilage
6. scoliosis—lateral curvature of the spine
7. Ewing sarcoma—malignant bone tumor
8. osteomyelitis—inflammation of bone and bone marrow
9. acetabulum—socket in the hip bone
10. osteodystrophy—poor development of bone

**B**
1. humerus
2. femur
3. epiphysis
4. kyphosis
5. calcaneus
6. phalanges
7. clavicle
8. patella
9. tibia
10. phosphorus

### Pronunciation Quiz

**A**
1. acetabulum
2. osteoarthritis
3. epiphysis
4. kyphosis
5. calcaneus
6. phalanges
7. fibromyalgia
8. phalanges
9. podagra
10. rheumatologist

**B**
1. clavicul/o
2. coccyg/o
3. cost/o
4. crani/o
5. fasci/o
6. femor/o
7. leiomy/o
8. humer/o
9. ili/o
10. ischi/o

### Diagram Quiz

1. Diaphysis
2. Epiphysis
3. Epiphyseal plate (line)
4. Metaphysis
5. Periosteum
6. Articular cartilage
7. Compact cortical bone
8. Haversian canals
9. Medullary cavity
10. Cancellous bone

### Review Sheet Quiz

**A**
1. acetabulum
2. stiff
3. joint
4. joint
5. bursa (sac of fluid near a joint)
6. calcium
7. calcaneus
8. wrist
9. neck
10. cartilage

**B**
1. clavicul/o
2. coccyg/o
3. cost/o
4. crani/o
5. fasci/o
6. femor/o
7. leiomy/o
8. humer/o
9. ili/o
10. ischi/o

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Chapter 15  |  ANSWERS TO THE QUIZZES  |  417

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ANSWERS TO THE QUIZZES

C
1. humpback
2. lamina (part of the vertebral arch)
3. curve, swayback
4. loins, lower back
5. malleolus (rounded portion of ankle bone)
6. maxilla (upper jaw bone)
7. hand bones
8. foot bones
9. muscle
10. bone marrow

D
1. muscle
2. olecranon (elbow)
3. straight
4. bone
5. patella (kneecap)
6. fibula (smaller lower leg bone)
7. finger and toe bones
8. vertebra, backbone
9. skeletal, striated muscle
10. vertebra, backbone

E
1. sacr/o
2. sarc/o
3. scapul/o
4. scoli/o
5. stern/o
6. thorac/o
7. fibul/o
8. uln/o
9. radi/o
10. mandibul/o

F
1. pain
2. lack of strength
3. immature cell, embryonic
4. to break
5. to bind, tie together
6. blood condition
7. slipping
8. softening
9. deficiency
10. surgical repair
11. pore, passage
12. narrowing

G
1. no, not, without
2. away from
3. toward
4. complete, through
5. back
6. above, upon
7. out, outside
8. between, beyond
9. surrounding
10. many, much
11. under, below
12. above

Medical Scramble
1. MANDIBLE
2. HUMERUS
3. COCCYX
4. FRONTAL

Crossword Puzzle

Practical Applications

A
1. D
2. B
3. A
4. C

B
1. D
**Chapter Fifteen**

**Answers to Terminology Section**

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bones—General Terms (textbook pages 596–600)</strong></td>
<td></td>
</tr>
<tr>
<td>hypercalcemia</td>
<td>Excessive calcium in the bloodstream.</td>
</tr>
<tr>
<td>decalcification</td>
<td>Removal of calcium from bones.</td>
</tr>
<tr>
<td>kyphosis</td>
<td>Abnormal posterior curvature of the thoracic vertebrae.</td>
</tr>
<tr>
<td>laminectomy</td>
<td>Removal of a lamina to relieve the symptoms of a ruptured intervertebral disk (disc).</td>
</tr>
<tr>
<td>lordosis</td>
<td>Abnormal anterior curvature of the backbones in the lumbar region.</td>
</tr>
<tr>
<td>lumbar</td>
<td>Pertaining to the loins or lower back (near the waist) region.</td>
</tr>
<tr>
<td>lumbosacral</td>
<td>Pertaining to the lower back and the sacrum.</td>
</tr>
<tr>
<td>myelopoiesis</td>
<td>Formation of bone marrow.</td>
</tr>
<tr>
<td>orthopedics</td>
<td>The specialty of medicine dealing with bones and bone diseases. Orthopedists originally straightened (orth/o) the bones of children (ped/o).</td>
</tr>
<tr>
<td>osteitis</td>
<td>Inflammation of bones.</td>
</tr>
<tr>
<td>osteodystrophy</td>
<td>Poor development of bones.</td>
</tr>
<tr>
<td>osteogenesis</td>
<td>Formation of bone.</td>
</tr>
<tr>
<td>scoliosis</td>
<td>Abnormal condition of lateral curvature of the spine.</td>
</tr>
<tr>
<td>spondylosis</td>
<td>Abnormal condition of vertebrae.</td>
</tr>
<tr>
<td>vertebroplasty</td>
<td>Repair of a fractured vertebra.</td>
</tr>
<tr>
<td><strong>Suffixes</strong></td>
<td></td>
</tr>
<tr>
<td>osteoblast</td>
<td>Immature bone cell.</td>
</tr>
<tr>
<td>osteoclast</td>
<td>Large cell found in the bone marrow of growing bones; absorbs and removes unwanted bone tissue.</td>
</tr>
<tr>
<td>spondylolisthesis</td>
<td>Forward displacement of a vertebra over a lower segment.</td>
</tr>
<tr>
<td>osteomalacia</td>
<td>Softening of bone.</td>
</tr>
<tr>
<td>epiphysis</td>
<td>End of a long bone.</td>
</tr>
<tr>
<td>pubic symphysis</td>
<td>Junction of the pubic bones on the midline in front of the body.</td>
</tr>
<tr>
<td>osteoporosis</td>
<td>Condition of increased porosity of bone with loss of bony tissue and decrease in bone mass.</td>
</tr>
<tr>
<td>osteotome</td>
<td>Instrument to cut bone.</td>
</tr>
<tr>
<td><strong>Specific Bones</strong></td>
<td></td>
</tr>
<tr>
<td>acetabular</td>
<td>Pertaining to the acetabulum (hip socket).</td>
</tr>
<tr>
<td>calcaneal</td>
<td>Pertaining to the calcaneus (heel bone).</td>
</tr>
<tr>
<td>carpal</td>
<td>Pertaining to the wrist bones.</td>
</tr>
<tr>
<td>suprACLAVICULAR</td>
<td>Pertaining to above the collarbone.</td>
</tr>
<tr>
<td>subcostal</td>
<td>Pertaining to below the ribs.</td>
</tr>
<tr>
<td>chondrocostal</td>
<td>Pertaining to the cartilage attached to the ribs.</td>
</tr>
<tr>
<td>craniotomy</td>
<td>Incision of the skull.</td>
</tr>
<tr>
<td>craniotome</td>
<td>Instrument to cut the skull.</td>
</tr>
<tr>
<td>femoral</td>
<td>Pertaining to the thigh bone (femur).</td>
</tr>
<tr>
<td>fibular</td>
<td>Pertaining to the smaller of the two lower leg bones (fibula).</td>
</tr>
<tr>
<td>humeral</td>
<td>Pertaining to the upper arm bone (humerus).</td>
</tr>
</tbody>
</table>
iliac Pertaining to the ilium (upper portion of the hip bone).
ischial Pertaining to the ischium (lower and posterior part of the hip bone).
malleolar Pertaining to the malleolus (process on each side of the ankle).
mandibular Pertaining to the lower jaw bone.
maxillary Pertaining to the upper jaw bone.
mecarctomy Removal of hand bones.
metatarsalgia Pain of the foot bones.
olecranal Pertaining to the elbow.
pelvimetry Measurement of the proportions of the pelvic bone (before childbirth).
peroneal Pertaining to the fibula.
phalangeal Pertaining to the finger or toe bones.
pubic Pertaining to the pubis (anterior portion of the hip bone).
radial Pertaining to the lateral lower arm bone.
scapular Pertaining to the shoulder bone.
sternal Pertaining to the breast bone.
tarsectomy Removal of ankle bones.
tibial Pertaining to the tibia, the larger and inner of the two lower leg bones.
ulnar Pertaining to the medial lower arm bone.

**Joints (textbook pages 606–607)**

ankylosis Abnormal stiffening and immobility of a joint.
arthroplasty Surgical repair of a joint.
arthrotomy Incision of a joint.
hemarthrosis Abnormal condition of blood in a joint.
hydrarthrosis Abnormal accumulation of fluid in a joint.
polyarthritis Inflammation of many joints.
articular cartilage The cartilage surrounding the bones in a joint.
bursitis Inflammation of a bursa.
achondroplasia Improper cartilage formation in development of bones (leads to a type of dwarfism).
chondroma Tumor (benign) of cartilage.
chondromalacia Abnormal softening of cartilage.
ligamentous Pertaining to a ligament.
rheumatologist Specialist in treatment of joint disorders.
synovitis Inflammation of a synovial membrane.
tenorrhaphy Suture of a tendon.
tenosynovitis Inflammation of a tendon and its sheath.
tendinitis Inflammation of a tendon; also spelled tendonitis.
arthrodiesis Binding together (surgical fusion) of a joint.
spinal stenosis Narrowing of the neural canal or nerve root canals in the lumbar spine.

**Muscles (textbook pages 617–619)**

fasciotomy Incision of fascia.
fibromyalgia Pain of fibrous connective tissue and muscle.
leiomyoma Tumor (benign) of a smooth muscle.
leiomyosarcoma Tumor (malignant) of a smooth muscle.
myalgia Pain of a muscle.
electromyography
myopathy
myocardial
myositis
plantar flexion
rhabdomyoma
rhabdomyosarcoma
sarcopenia
myasthenia gravis
atrophy
hypertrophy
amyotrophic
abduction
adduction
dorsiflexion
polymyalgia

Process of recording the electricity in muscle.
Disease of muscles.
Pertaining to heart muscle.
Inflammation of muscle.
Bending downward of the sole of the foot.
Tumor (benign) of a skeletal muscle.
Tumor (malignant) of skeletal muscle.
Loss of muscle mass and strength associated with aging.
Condition of muscle weakness caused by a failure in transmission of nervous impulses from a nerve to muscle cell.
Decrease in size of a normally developed organ or tissue; wasting of tissue.
Excessive development (increase in cell size).
Pertaining to loss of muscle development (in amyotrophic lateral sclerosis muscles can’t move because of degeneration of nerve cells in the brain and spinal cord).
Process of carrying away (muscle is pulled away from the midline of the body).
Process of carrying toward (muscle is pulled toward the midline of the body).
Bending of the foot backward and upward.
Pain of many muscles.