**Chapter Two Answer Key**

***Answers to Lesson Exercises***

p. 17 Exercise A

(smallest to largest)

1. a. atoms

b. molecules

c. organelles

d. cells

e. tissues

f. organs

g. organ systems

h. organism

p. 17 Exercise B

1. The suffix -logy means study of. The suffix that means specialist in the study of is -logist.

2. A combining form is a root and its associated combining vowel. The combining vowel o makes cyt/o a combining form rather than a root.

3. The union of a male sperm and a female egg is called fertilization.

4. The suffix –elle refers to a small size.

5. A cytologist studies cells. Cyt/o is a root that means cells and –logist is a suffix that means specialist in the study of.

p. 19 Exercise A

1. electrolyte

2. metabolic

3. metabolism

4. membrane

p. 21 Exercise A

1. Mr. Josen injured his knee while playing football.

2. An arthroscopy is a visual examination of a joint.

3. The patellar tendon is anterior to the knee joint. It holds the kneecap (patella) in place.

4. The medial collateral ligament and the medial meniscus were repaired.

5. The torn anterior cruciate ligament (ACL) was removed and replaced with a graft.

p. 21 Exercise B

1. Orthopedic: adjective; The term orthopedics refers to the medical specialty that diagnoses and treats diseases and conditions of bones.

2. Collateral: adjective; The term collateral refers to one of two structures, each located on the left or right side of the body.

3. Sutured: verb; The term sutured refers to the completed action to close an incision or a laceration (cut or tear) of a body part by placing stitches to bind the wound edges together.

p. 23 Exercise A

1. Peri\_\_\_/\_\_oste\_\_/\_um

P\_\_\_/\_R/CF\_\_\_/\_\_S\_

2. \_\_\_\_\_/\_Coll/a\_\_/\_gen

P\_\_\_/\_\_\_R/CF\_\_/\_S\_

3. syn/\_ov\_/ial

P\_\_\_/\_\_\_R/CF\_\_/\_\_S\_\_

4. \_\_\_\_/\_Nutri\_\_\_/\_\_ent

P\_\_\_/\_\_R/CF\_\_/\_\_S\_\_\_

p. 23 Exercise B

1. peri\_\_/\_\_oste\_\_/\_\_um

P\_\_\_/\_\_\_R/CF\_\_/\_\_S\_\_

2. \_\_\_\_/\_\_coll/a\_\_/\_\_gen

P\_\_\_/\_\_\_\_R/CF\_/\_\_S\_\_

3. syn\_\_/\_\_ov\_\_/\_\_ial

P\_\_\_/\_\_\_R/CF\_\_/\_\_S\_\_

4. cartilage

5. capsule, cartilage, matrix, tendon

p. 25 Exercise A

1. \_\_\_\_\_\_\_\_/\_\_lymph\_\_/\_\_atic\_

\_\_\_\_\_\_\_\_/\_\_lymph\_\_/\_\_pertaining to

2. \_\_\_\_\_\_\_/\_\_cardi/o\_\_\_\_\_vascul\_\_\_\_/\_\_ar

\_\_\_\_\_\_\_/\_\_\_heart\_\_\_blood vessel\_/\_pertaining to

3. \_\_\_\_\_\_\_/\_\_skelet\_\_\_/\_\_al\_\_

\_\_\_\_\_\_/\_\_\_skeleton\_/\_pertaining to

4. \_\_\_\_\_\_/\_\_integument\_\_\_/\_\_\_ary\_\_

\_\_\_\_\_\_/\_\_covering of the body\_\_/\_pertaining to

5. \_\_\_\_\_/\_\_\_\_\_digest\_\_\_\_\_\_/\_\_ive\_\_

\_\_\_\_\_/\_break down food/\_pertaining to

p. 25 Exercise B

1. Cardiovascular, digestive, endocrine, integumentary, lymphatic, nervous, respiratory, skeletal, urinary --- all are body systems

2. Homeostasis means maintaining the body's internal environment and uses the root home/o. Hemostasis means to control bleeding and uses the root hem/o. The difference in these two terms is the root.

3. The main organ in the integumentary system is the skin.

4. The bony framework of the body is the called the skeleton.

5. The term lymph refers to clear fluid collected from body tissues.

p. 27 Exercise A

1. To examine Mrs. Arnold's abdomen, she should be placed in a supine position, which is lying on her back.

2. To examine Mrs. Arnold's spine, she should be placed in a prone position, which is lying on her face down.

3 Mrs. Arnold's spine is posterior to her abdomen.

p. 27 Exercise B

1. Anterior/posterior are opposites.

2. Ventral/anterior are synonyms.

3. Prone/supine are opposites.

4. Coronal/frontal are synonyms.

5. Cephalic/cauda are opposites.

6. Cephalic/superior are synonyms.

p. 29 Exercise A

1. none\_\_\_\_\_/\_diaphragmat\_\_\_\_\_/ ic

P\_\_\_\_\_\_\_\_/\_\_\_\_\_\_R/CF\_\_\_\_\_\_\_/\_\_S

2. none\_\_\_\_/\_\_abdomin/o\_\_\_pelv\_/\_\_ic

P\_\_\_\_\_\_\_/\_\_\_\_CF\_\_\_\_\_\_\_\_R\_\_\_/\_\_S

3. none\_\_\_\_\_\_/\_\_umbilic\_\_\_/\_\_al

P\_\_\_\_\_\_\_\_\_/\_\_R/CF\_\_\_\_/\_\_S

4. none\_\_\_\_\_/\_\_crani\_\_\_\_/\_\_al

P\_\_\_\_\_\_\_\_/\_\_\_R/CF\_\_\_/\_\_\_S

5. none\_\_\_\_/\_\_\_thorac\_\_/\_\_ic

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_/\_\_S\_

6. none\_\_\_\_/\_\_cav\_\_\_\_\_/\_\_ity

P\_\_\_\_\_\_/\_\_R/CF\_\_\_\_/\_\_S\_

p. 29 Exercise B

1. Abdominopelvic contains both a root and combining form. abdomin/o = CF and pelv = R

2. Diaphragmatic refers to the diaphragm, a muscle that separates the thoracic and abdominal cavities.

3. The term quadrant represents the number 4.

4. Another medical term that means spine is vertebral column.

5. A dentist may use the term cavity. A body cavity is a space. The decay of a tooth creates an erosion, which is a hole or an empty space in the surface of a tooth.

***Answers to Chapter Review***

p. CR2-1 Exercise A

1. \_\_ (blank) \_\_/\_\_ster\_\_/\_\_oid

2. \_\_ (blank) \_\_/\_organ\_/\_\_elle

3. \_\_ (blank) \_\_/\_\_metabol\_\_/\_\_ic

4. \_\_ (blank) \_\_/\_\_catabol\_\_/\_\_ism

5. \_\_ (blank) \_\_arthr/o\_\_\_\_/\_\_scopy

6. \_\_ (blank) \_\_hist/o\_\_\_\_\_/\_\_logist

7. \_\_\_peri\_\_\_\_\_/\_\_oste\_\_/\_\_um

8. \_\_ (blank) \_\_\_/\_\_home/o\_\_/\_\_stasis

9. \_\_ (blank) \_\_\_/\_\_dors\_\_\_\_\_/\_\_al

10. \_\_ (blank) \_\_/\_\_\_nerv\_\_\_\_/\_\_ous

p. CR2-1 Exercise B

Question: e

1. The question uses the word bone, and the element in one of the terms is-oste-, which means bone.

2. The incorrect choices are c and d because they are not in the skeletal system and the question is asking about the covering of bone.

3. The word bone appears in the question and its root is oste. The only choice that contains the root oste is periosteum.

4. periosteum, -oste-

p. CR2-2 Exercise C

1. electrolyte

2. cruciate

3. meniscus

4. cartilage

5. synovial

6. umbilical

7. thoracic

8. patella

9. integumentary

10. respiration

p. CR2-2 Exercise D

All of the exercises in this section will vary by student.

1. abdomin/o

2. abdomen

3. abdominopelvic

4. thorac/o

5. chest

6. thoracic

7. umbilic/o

8. navel

9. umbilical

10. cyt/o

11. cell

12. cytology

13. electr/o

14. electricity

15. electrolyte

16. hist/o

17. tissue

18. histologist

19. oste/o

20. bone

21. periosteum

22. cardi/o

23. heart

24. cardiovascular

25. home/o

26. the same

27. homeostasis

28. respir/a

29. to breathe

30. respiratory

p. CR2-3 Exercise E

1. An organ is a structure with specific functions in a body system.

2. An organelle is a part of a cell having a specific function; a small organ.

3. The difference between the two terms is the suffix –elle which means small.

p. CR2-3 Exercise F

1. The doctor has told the patient that her knee joint lacks fluid normally found within a joint (synovial fluid), and this is the cause of her severe pain.

2. The surgeon who treats diseases of bone (orthopedic surgeon) has recommended an procedure using an instrument to view a joint (arthroscopy) to repair the torn band of fibrous tissue that holds the knee joint together on the front of the body (ACL ligament) and the torn disc of cartilage in the middle of the knee joint (medial meniscus).

p. CR2-3 Exercise G

1. anatomical position

2. cephalic

3. mediastinum

p. CR2-4 Exercise H

1. pertaining to

2. abdominal

3. pertaining to

4. intracellular

5. process

6. fertilization

7. small

8. organelle

9. condition

10. mitochondria

11. pertaining to

12. thoracic

13. pertaining to

14. anterior

15. state, condition

16. cavity

17. one who studies, a specialist

18. histologist

19. study of

20. cytology

21. small

22. nucleolus

23. resembling

24. steroid

25. tissue

26. periosteum

27. These elements are all suffixes.

p. CR2-4 Exercise I

1. nucleus
2. thorax
3. mitochondria
4. homeostasis
5. integumentary
6. umbilicus
7. oocyte
8. cell
9. lymph
10. hormone

p. CR2-5 Exercise J

1. therapeut- and therap- both mean treatment.

2. -lus and –elle both mean small.

3. dors- and poster- both mean back (back part).

p. CR2-5 Exercise K

Suffix for study of is –logy

Suffix for specialist is –logist

1. pulmonology

2. pulmonologist

3. cardiology

4. cardiologist

5. neurology

6. neurologist

7. cytology

8. cytologist

9. urinary

10. urologist

11. histology

12. histologist

p. CR2-5 Exercise L

1. F

2. G

3. J

4. I

5. A

6. E

7. C

8. D

9. B

10. H

p. CR2-6 Exercise M

1. tail

2. caudal

3. pertaining to the tail

4. head

5. cephalic

6. pertaining to the head

7. glue

8. collagen

9. producing glue

10. electricity

11. electrolyte

12. soluble electricity

13. within

14. endocrine

15. to secrete within

16. change

17. metabolism

18. process of change

19. bone

20. periosteum

21. tissue surrounding bone

22. back part

23. posterior

24. pertaining to the back part

25. to examine, to view

26. arthroscopy

27. to view a joint

28. blood vessel

29. cardiovascular

30. pertaining to the heart and blood vessels

p. CR2-6 Exercise N

1. (blank) \_\_\_\_/\_\_cephal\_\_/\_\_ic

P\_\_\_\_\_\_\_\_/\_\_\_R/CF\_\_/\_\_S

2. (blank) \_\_\_/\_\_\_proxim\_\_/\_\_al

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

3. (blank) \_\_/\_\_\_\_\_cav\_\_\_/\_\_ity

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

4. (blank) \_\_/\_\_\_cyt/o\_\_\_\_/\_\_logy

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

5. intra\_\_\_\_/\_\_cellul\_\_\_\_/\_\_ar

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

6. (blank) \_/\_\_anabol\_\_\_/\_\_ism

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

7. (blank) \_\_/\_\_arthr/o\_\_\_/\_\_scopy

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

8. (blank) \_\_/\_\_hist/o\_\_\_\_/\_logist

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

9. syn\_\_\_\_\_/\_\_ov/i\_\_\_\_\_/\_\_al

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

10. (blank) \_\_/\_\_home/o\_\_/\_\_stasis

P\_\_\_\_\_\_\_/\_\_\_\_R/CF\_\_\_/\_\_S

p. CR2-7 Exercise O

1. Incorrect; Rewritten: Inferior pertains to being situated below something.

2. Correct statement

3. Correct statement

4. Incorrect; Rewritten: Sagittal is a vertical plane that divides the body into right and left portions.

5. Correct statement

6. Incorrect; Rewritten: Distal is opposite to proximal. Ventral is opposite to dorsal.

7. Incorrect; Rewritten: Posterior is the opposite of anterior. Caudal is the opposite of cephalic.

8. Incorrect; Rewritten: When you lie flat on your back, you are supine.

9. Incorrect; Rewritten: Ventral is the same as anterior. Dorsal is the same as posterior.

10. Correct

11. Correct

p. CR2-7 Exercise P

1. e

2. b

3. b

4. d

p. CR2-8 Exercise Q

1. a

2. c

3. b

4. c

5. e

6. b

7. a

8. d

9. e

10. b

11. c

12. c

13. d

14. b

15. d

16. b

p. CR2-10 Exercise R

1. An arthroscopy is a surgical procedure to visually examine the inside of a joint.

2. A ligament is a band of fibrous tissue connecting two structures.

3. A cruciate ligament forms the shape of a cross.

4. The patient’s torn anterior cruciate ligament (ACL) was removed.

5. A graft from the patient’s patellar tendon was transplanted. The graft came from the tendon that attaches the patient’s patella (kneecap).

6. Medial refers to a location that is nearer to the midline of the body.

7. The patient’s medial collateral ligament and the medial meniscus were repaired.

8. A meniscus is a disc of cartilage between the bones of a joint that functions as a shock absorber and provides a smooth gliding surface between the bones.

9. Rehabilitation refers to the therapeutic restoration of an ability to function at a previous level.

10. Joint mobility and stability are two qualities necessary for proper joint function. Mobility refers to the ability to move a joint properly in all directions and angles allowed by the joint. Mobility in the knee is the ability to flex and extend the lower leg properly. Stability of a joint refers to the ability to maintain the joint in the desired position. Joint stability is created because the tendons and ligaments surrounding the joint hold it in its proper place.