Name: _____ Lab Time: _____

Introduction to the Human Body
Study Guide, Chapter 1

Part I. Clinical Applications

1. Unlike the abdominal viscera, the pleural viscera within the thoracic cavity are separated into two compartments by an area called the mediastinum. What is the clinical importance of this compartmental arrangement?

   Since there is a lung in each compartment, if one lung is diseased or infected the other lung may remain functional. Also, if one lung is traumatized due to injury, the other one may be spared and function sufficiently to save the life of the injured person

2. A radioactive tracer is induced into the heart to trace the possibility of a blockage in or around the uterus. Give the sequence of body cavities that would be included as the tracer travels in the blood from the heart through the aorta and uterine artery.

   Pericardial, thoracic, abdominal, pelvic

3. Monitoring fetal development may be dangerous for the fetus if improper diagnostic techniques are used. Why is ultrasound an effective means of monitoring fetal development?

   No adverse effects have been attributed to the sound waves, and fetal development can be monitored without a significant risk of birth defects. Ultrasound machines are relatively inexpensive and portable.

4. Gastroenterologists use X-rays to check for ulcers or other stomach and upper digestive tract disorders. Before the X-rays are taken why is it necessary for the patient to drink large quantities of a solution that contains barium ions?

   Barium is very radiodense, and the contours of the gastric and intestinal lining can be seen against the white of the barium solution.

5. An alien landed in your backyard, abducted your cat, and flew off. Being an observant student of anatomy, your later described the alien's appearance to the FBI as follows: "It had 2 caudal extensions, 6 bilateral extremities, 4 axillae, two pedals, 8 otics, and 1 oral orifice in place of an umbilicus." What did the alien look like in common terms?

   The alien would have 2 tails, 4 arms, 2 legs –each with a foot, 8 ears, and a mouth where its navel is usually located

6. The Chan family was traveling in their van and had a minor accident. The children in the backseat were wearing lab belts, but they still sustained bruises around the abdomen and had some internal organ injuries. Why is this area more vulnerable to damage than others?

   The anterior and lateral aspects of the abdomen have no bony (skeletal) protection.

7. John, a patient at Redding Medical Center, is in bad shape. He has a hernia in his inguinal region, pain from an infected kidney in his lumbar regions, and severe bruises and swelling in his pubic region. Explain, in common terms, where each of these regions is located?

   John has a hernia in the area where his thigh and trunk meet. Pain from his infected kidney radiating to his lower back, and bruises and swelling in his genital area.

8. The following are advanced imaging techniques have been discussed in lecture: CT, DSA, PET, ultrasound, and MRI. Which of these techniques uses X-rays? Which uses radio waves and magnetic fields? Which uses radioisotopes? Which displays body regions in sections? Your may have more than one answer for each question.

   Techniques that use -
   X-rays: CT and DSA
   Radiowaves and magnetic field: MRI
   Radioisotopes: PET

   Techniques that display body regions is sections: CT, MRI, and PET

9. A patient reports stabbing pains in the right hypochondriac region. Based on your knowledge of the organs in this area give a probable diagnosis?

   The right hypochondriac region contains the gallbladder and a larger portion of the liver. Initial diagnosis would be gallstones.

10. Early one morning you develop sharp pains in the right lower quadrant. In addition you discover that you are running a fever. Give a probable diagnosis for your symptoms.

    Appendicitis

11. Mikhail has been diagnosed with a ruptured appendix, which has allowed bacteria from his intestinal tract to infect his peritoneum. Why is this condition (peritonitis) so dangerous?

    The peritoneum, the largest serous membrane in the body, covers most organs in the abdominal cavity. Therefore, an infection in this structure can spread to any or all organs in the cavity.

12. You are studying for your first anatomy exam and want to know which areas of your brain are working hardest as you study. Your classmate suggests that you could have a computed tomography (CT) scan done to assess your brain activity. Would this be the best way to determine brain activity?

    No. Computed tomography is used to look at differences in tissue density. To assess activity in an organ such as the brain, a positron emission tomography (PET) scan would provide a colorized visual assessment of brain activity.

Part II

1. Ventral (anterior) cavity
2. Thorascic cavity
3. Diaphragm
4. Abdominal cavity
5. Pelvic cavity
6. Cranial cavity
7. Spinal cavity
8. Dorsal (posterior) cavity
9. Lt Pleural cavity
10. Pericardial cavity
11. Rt. Pleural cavity
12. diaphragm
13. Abdominal Cavity
14. Frontal (coronal)
15. Transverse
16. Midsagittal
17. Abdominal
18. Pelvic
19. Cranial
20. Thorascic
21. Ventral
22. Cranial cavity
23. spinal cord
24. Two pleural cavities
25. Heart
26. Abdominal cavity
27. Pelvic cavity
28. Cells
29. Tissues
30. Organs
31. Organ Systems

Part III

1. Ventral, Pelvic
2. Ventral, Thoracic
3. Dorsal, Cranial
4. Ventral, Pelvic
5. Ventral, Abdominal
6. Epigastric region
7. Rt. Hypochondriac region
8. Umbilical region
9. Rt. Lumbar region
10. Hypogastric region
11. Rt. Iliac region
12. Anterior
13. Posterior
14. Superior
15. Superior
16. Lateral
17. Anterior
18. Medial
19. Proximal, Superior
20. Distal, Inferior
21. Posterior
22. Superior
23. C
24. C

Part IV

1. Urinary
2. Endocrine
3. Skeletal
4. Cardiovascular
5. Integumentary
6. Lymphatic/Immune
7. Digestive
8. Respiratory
9. Cardiovascular
10. Muscular
11. Urinary
12. reproductive
13. Endocrine
14. Integumentary
15. Epithelial, Connective, Muscular, nervous
16. Peritoneum
17. ipsi-lateral
18. Parasagittal
19. Inferior, lateral (also superior)
20. Neck
21. Antebrachial
22. Armpit
23. Buccal
24. Eye
25. Femoral
26. Foot
27. Inguinal
28. Shoulder
29. Mental
30. Leg
31. Mammary
32. Wrist
33. Brachial
34. Heel
35. Metacarpal
36. ankle
37. Digital or Phalangeal
38. Buttocks
39. Popliteal
40. Manual
41. Plantar
42. Back of elbow
43. Coxal
44. Mouth
45. E
46. C
47. E
48. E
49. C
50. C
51. D
52. D
53. F
54. F
55. T
56. T
57. F

Part V

1. DSA
2. PET
3. CR
4. US
5. CT
6. MRI
7. 2
8. 3
9. 1
10. 4
11. A
12. D
13. A
14. C
15. A
16. C
17. Subatomic Particles
18. Atoms
19. Molecules
20. Protoplasm
21. Organelles
22. Cells
23. Tissues
24. Organs
25. Systems
26. Organism
27. F
28. D
29. G
30. A
31. B
32. E
33. C
34. A

Part VI

Exercise A

1. Cranial cavity
2. Spinal cavity
3. Mediastinum
4. Pleural cavity
5. Pericardial cavity
6. Diaphragm
7. Abdominal cavity
8. Pelvic cavity
9. Abdominopelvic cavity
10. Ventral cavity

Exercise B

1. Cranial cavity
2. Dorsal cavity
3. Spinal cavity
4. Thoracic cavity
5. Diaphragm
6. Abdominal cavity
7. Pelvic cavity