

Sample test questions for Dr. Erianne's Lecture Exams

Answer Key (Multiple Choice/T-F answers are italicized)

1. A patient complains of having pain just below the rib cage around the area of the stomach. When you note this on the patient's chart, you would indicate the area of discomfort as being

- a. in the RUQ
- b. in the LUQ*
- c. in the RLQ
- d. in the LLQ

2. Which one of the following elements in the human body would be found in a lower amount (by weight) than the others?

- a. carbon
- b. hydrogen
- c. nitrogen
- d. phosphorus*
- e. oxygen

3. What is the region called that lies between the lungs and that extends from the sternum to the vertebral column and contains the heart, esophagus, and trachea?

- a. mediastinum*
- b. pericardial cavity
- c. pleural cavity
- d. thorax

4. A patient drank a poison that drastically lowered the amount of H^+ in the body. Which of the following would be representative of the pH in this patient's blood plasma after they've ingested this poison?

- a. 7.00
- b. 7.35
- c. 7.40
- d. 7.50*

5-8. Match the following organic molecules to their function

- 5. b nucleic acids
- 6. d phospholipids
- 7. c proteins
- 8. a triglycerides
- a. compact form of energy reserve
- b. DNA, RNA
- c. forms the body's structural components
- d. makes up most of the cell membrane
- e. sex hormones, e.g., testosterone, estrogen

9. In what type of molecules is an 'R' group a shorthand notation for representing chemical side chains that distinguish the different members of this class of molecules?

- a. *amino acids*
- b. monosaccharides
- c. fatty acids
- d. nucleotides

10. Hemoglobin (Hb) is a protein in red blood cells that transports oxygen in our blood. This protein is composed of four separate protein chains that function together to make Hb function efficiently. What level of protein structure allows the cooperation between the four different protein chains of Hb?

- a. primary
- b. secondary
- c. tertiary
- d. *quaternary*

11. In general, what type of bonds would you expect the element $_{19}\text{K}$ to form with other elements?

- a. covalent
- b. hydrogen
- c. *ionic*
- d. none - it's inert

12. If you have 62.0 grams of ^{31}P and put this in 1 liter of H_2O , you would then have a 1.5 molar solution of this element.

- a. true
- b. *false*

Bonus question samples

1. Explain why radioactive isotopes are useful in examining the function of body systems/organs.

Since radioactive isotopes differ from non-radioactive isotopes only in their number of neutrons, the electron configuration is identical among isotopes of an element. Thus, all isotopes of an element react identically with other atoms. This is useful clinically since radioactive isotopes, which emit radiation we can detect with the right instruments, can be given to patients and they will react in the body the same as nonradioactive forms. However, they will usually 'home' to different areas of the body and allow imaging of areas in which they are taken up.

2. A patient's body temperature is 38.5°C . Describe what the body would do to maintain homeostasis.

Since the body's normal temperature is 37°C , this patient would have an abnormally high body temperature. In order to bring the temperature back to normal, the body would activate sweat glands and dilate blood vessels beneath the skin to cause cooling.