

STUDY QUESTIONS, Chapter 6

Read the introductory paragraphs of chapter 6 as well as the section with the heading “**The Structure of Proteins**”. (about 7 pages)

1. Considering amino acids and proteins, which statement is true?
 - a. Proteins are made of many amino acids.
 - b. Amino acids are made of many proteins.
 - c. Proteins and amino acids are the same thing.
2. How does the body get the amino acids it needs?
 - a. Digesting proteins in food (and absorbing amino acids into the blood)
 - b. Making some of them from nitrogen and fragments of glucose
 - c. Making some of them from nitrogen and fragments of fat
 - d. Recycling amino acids that have finished their cellular work
3. What does the body use to build the proteins it needs?
 - a. Atoms of nitrogen
 - b. Atoms of carbon
 - c. Amino acids
4. What is it that enables proteins to perform different tasks in the body?
 - a. The number of nitrogen atoms in the side chain
 - b. The shape (structure) of the protein
 - c. The number of nitrogen atoms in the amino group
5. A single human cell may have as many as _____ different proteins.
6. Which is a TRUE statement?
 - a. Every cell nucleus has the DNA for making only the proteins needed by that cell type.
 - b. Every cell nucleus has the DNA for making every human protein.
7. Read the **THINK FITNESS** section with the title “Can Eating Extra Protein Make Muscles Grow Larger”? What does it say stimulates muscle growth?
 - a. Taking extra vitamins
 - b. Taking extra protein
 - c. Taking extra amino acids
 - d. Hard work
 - e. Exercise
8. Now read the section with the heading "**Digestion and Absorption of Protein**". Look at the FIGURE in this section called "How Protein in Food Becomes Amino Acids in the Body". Where are there enzymes for splitting tripeptides and dipeptides?
 - a. the stomach
 - b. inside the lumen (the opening, shown here in brown) of the small intestine
 - c. the surface of the small intestine's lining

9. Read the section with the heading "**The Roles of Protein in the Body**". Which of the roles of protein in the body can be performed by eating carbohydrate or fat?
- Supporting growth
 - Building enzymes and hormones
 - Building antibodies
 - Maintaining fluid balance
 - Maintaining acid-base balance
 - Providing energy
10. Read the **CONSUMER CORNER** called "Protein and Amino Acid Supplements". Regarding the absorption of amino acids, what does it say can be a problem with taking an excess of a single amino acid?

Read the section with the heading "**Protein Deficiency and Excess**".

11. PEM is a deficiency of what two substances? _____

<p>12. Which disease can <i>matchstick arms</i> be seen?</p> <ol style="list-style-type: none"> Marasmus Kwashiorkor 	<p>13. Which disease can a <i>swollen belly</i> be seen?</p> <ol style="list-style-type: none"> Marasmus Kwashiorkor
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14. Over consumption of protein can pose health risks for what 3 parts of the body? _____

15. Briefly look at Chapter 15, "Hunger and the Global Environment". Go the section with the heading "Environmental Degradation and Hunger". Describe one thing you learned that you didn't know before. **Include the page number in your answer.**

16. Read in this section about overpopulation. Then select ALL of the TRUE statements made in this section.
- Wealthy people have more children.
 - Poverty is correlated with less education about controlling family size.
 - A family living in poverty may have more children to help farm and haul water.
 - At the present rate of increase, the human population will exceed the earth's estimated carrying capacity by the year 2020.
 - If a family faces ongoing poverty, and its young children are among the most likely to die, the parents will choose to have many children.
 - In countries where economic growth has benefited only the rich, like Brazil, population growth remains low.

Still in Chapter 15, read the section, "Agribusiness and Food Production: How to Go Forward?"

17. According to this section, in the past 40 years what percent of the earth's fertile land has been ruined?
18. Which of the following statements is TRUE?
- More land is used to produce grain for people
 - More land is used to produce grain for livestock

- 19. How many pesticide poisonings among California farm workers were reported from 1997 to 2000?
- 20. Which of the following is true about AGRIBUSINESS
 - a. Profits tend to stay in local communities
 - b. Agribusiness places a priority on protecting soil, water, and biodiversity
 - c. They produce abundant inexpensive food
- 21. Which of the following food takes the most energy to be produced
 - a. Fruits and vegetables
 - b. Grain fed livestock
 - c. Grains
 - d. Open range, grass fed livestock

Still in Chapter 15, look at the section, “How big is your ecological foot print?”

- 22. Take the quiz in this section. What did you score?
 - a. 1-25
 - b. 26-50
 - c. 51-75
 - d. 76-100

The following questions are from the lecture outline for Protein:

- 23. According to the protein lecture (**Lecture 6A: Proteins**), where do digestive enzymes come from?
- 24. According to the protein lecture outline, which are considered "working proteins?"

a. Tendons	c. cellular “pumps”
b. bones	d. enzymes

- 25. According to “**Lecture 6A: Proteins**” and the lecture outline, why do kidney beans have more protein than green beans?
- 26. Consider a snack of Ak Mak crackers. The cracker **ingredients** include 100% stone ground whole wheat flour, water, honey, sesame oil, butter, sesame seeds, yeast and salt. Which ingredients in the Ak Mak crackers are considered to be sources of protein? See the document **Food Sources and Health Benefits of Macronutrients**.
 - a. 100% stone ground whole wheat flour
 - b. sesame oil
 - c. sesame seeds
 - d. salt

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<p>27. What in the snack of Ak Mak crackers (described in the previous question), needs to be enzymatically digested? Consider the sources of protein in this snack as well as the sources of carbohydrate and fat.</p> <ol style="list-style-type: none"> Starch Glucose Maltose Lactose Galactose Sucrose Fructose Fiber Triglycerides Fatty acids Glycerol Cholesterol Protein Amino acids 	<p>28. After eating the Ak Mak crackers, what is absorbed into the cells lining SI (& then lymph or blood)?</p> <ol style="list-style-type: none"> Starch Glucose Maltose Lactose Galactose Sucrose Fructose Fiber Triglycerides Fatty acids Glycerol Cholesterol Protein Amino acids
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29. According to “**Lecture 6B: World Neighbors**”, which country supplies all of the overseas workers for World Neighbors?

- England
- Australia
- Sweden
- Norway
- the United States
- none of the above

30. What is one interesting thing you learned from “**Lecture 6B: World Neighbors**”?

31. **MYSTERY QUESTION**. For this one, have your Chapter 6 LECTURE OUTLINE in front of you. You will be asked 1 or more questions about something from one of the blanks or questions that were answered in **Lecture 6A**.

32. Take a look at the FORUM for Week **5** (last week). Do you find one posting done by you? _____