University of Central Florida (UCF) HUN3011 Human Nutrition Practice Exam 1 (Sample)

Study Guide

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Questions

1. Which of the following nutrients does NOT provide energy to the body?

   A. Fats

   B. Proteins

   C. Fiber

   D. Carbohydrates

2. Which digestive process involves a forward-and-backward movement that aids in controlling food mass movement?

   A. Peristalsis

   B. Segmentation

   C. Absorption

   D. Digestion

3. What type of nutrient is glucose primarily classified as?

   A. Complex carbohydrate

   B. Simple carbohydrate

   C. Protein

   D. Vitamin

4. What is the energy content of alcohol per gram?

   A. 5 calories per gram

   B. 7 calories per gram

   C. 9 calories per gram

   D. 4 calories per gram

5. How many ounces of water should an adult aim to drink daily?

   A. 32 ounces

   B. 64 ounces

   C. 96 ounces

   D. 48 ounces

6. What food group is a primary source of protein?

A. Fruits

B. Dairy

C. Meat, poultry, fish, eggs, beans, and legumes

D. Grains

7. What is the difference between saturated and unsaturated fats?

A. Saturated fats are liquid at room temperature

B. Saturated fats typically come from plant oils

C. Saturated fats are solid at room temperature and typically come from animal products

D. Unsaturated fats contain no double bonds in their structure

8. Which vitamin is critical for vision and immune function?

A. Vitamin B12

B. Vitamin D

C. Vitamin C

D. Vitamin A

9. Why are whole grains considered healthier than refined grains?

A. They are cheaper and more accessible

B. They retain fiber, vitamins, and minerals lost during refinement

C. They have a lower caloric content

D. They taste better and are easier to digest

10. What type of dietary fat is considered harmful to heart health?

A. Monounsaturated fats

B. Polyunsaturated fats

C. Saturated fats

D. Omega-3 fatty acids

Answers

1. C
2. B
3. B
4. B
5. B
6. C
7. C
8. D
9. B
10. C

Explanations

1. Which of the following nutrients does NOT provide energy to the body?

A. Fats

B. Proteins

C. Fiber

D. Carbohydrates

Fiber is the correct answer because it is classified as a type of carbohydrate, but it is unique in that it is not digested and absorbed by the body in the same way that other carbohydrates are. While fats, proteins, and carbohydrates all provide calories that the body can use for energy—fats provide 9 calories per gram, and both proteins and carbohydrates provide 4 calories per gram—fiber passes through the digestive system largely intact and does not yield energy in the form of calories. Fiber plays a crucial role in digestive health by aiding in regular bowel movements, but it does not contribute energy like other macronutrients. This characteristic distinguishes fiber from fats, proteins, and carbohydrates, which can be metabolized for energy.

2. Which digestive process involves a forward-and-backward movement that aids in controlling food mass movement?

A. Peristalsis

B. Segmentation

C. Absorption

D. Digestion

Segmentation is a digestive process characterized by the forward-and-backward movement within the intestines, which effectively mixes food with digestive juices and facilitates nutrient absorption. This process occurs primarily in the small intestine and is crucial for breaking food into smaller pieces, allowing for a more even exposure of the food to the intestinal walls where absorption takes place. During segmentation, rhythmic contractions of the circular muscles in the intestinal walls occur, creating segments of food that move back and forth. This mixing action ensures that the nutrient-rich contents are thoroughly processed and maximizes contact with the surface for absorption into the bloodstream. While peristalsis refers to the wave-like contraction that moves food forward through the digestive tract, it does not involve the back-and-forth movement that segmentation does. Digestion is the overall breakdown of food into smaller components, and absorption describes the process of taking in those nutrients, but neither directly describes the specific mixing action that segmentation performs.

3. What type of nutrient is glucose primarily classified as?

A. Complex carbohydrate

B. Simple carbohydrate

C. Protein

D. Vitamin

Glucose is primarily classified as a simple carbohydrate because it is a monosaccharide, which is the most basic form of carbohydrate. Simple carbohydrates consist of one or two sugar units, with monosaccharides like glucose being single sugar molecules. They are quickly absorbed into the bloodstream and provide immediate energy for the body, making them distinct from complex carbohydrates, which are made up of longer chains of sugar units and take longer to digest. Understanding this classification is important in nutritional studies since simple carbohydrates can lead to rapid increases in blood sugar levels, which is crucial for managing energy levels and understanding dietary impacts on health.

4. What is the energy content of alcohol per gram?

A. 5 calories per gram

B. 7 calories per gram

C. 9 calories per gram

D. 4 calories per gram

The energy content of alcohol is 7 calories per gram. This value is scientifically established based on the metabolic processes involved when the body metabolizes alcohol. Unlike macronutrients such as carbohydrates and proteins, which provide approximately 4 calories per gram, and fats, which provide about 9 calories per gram, alcohol occupies its unique position due to its specific metabolism and the effect it has on the body. When consumed, alcohol is broken down by the liver, where it is converted into acetaldehyde and then further metabolized to acetate. This process releases energy, specifically in the form of calories. The 7 calories per gram is important for understanding dietary energy intake and metabolism, as it indicates that alcohol can contribute a significant amount of energy without offering essential nutrients. This has implications for those looking to manage their weight or maintain a balanced diet, as alcohol can add to caloric intake without providing nutritional benefits. Ultimately, recognizing the caloric value of alcohol helps inform dietary choices and enables individuals to better understand how it fits into their overall nutritional framework.

5. How many ounces of water should an adult aim to drink daily?

A. 32 ounces

B. 64 ounces

C. 96 ounces

D. 48 ounces

The recommendation for adults to aim for approximately 64 ounces of water daily is grounded in the general guideline that suggests consuming eight 8-ounce glasses of water. This is often referred to as the "8x8 rule," which simplifies hydration recommendations and is widely recognized. Adequate hydration is essential for various bodily functions, including regulating temperature, maintaining joint lubrication, delivering nutrients to cells, and facilitating waste disposal. While individual water needs can vary based on factors such as activity level, climate, and overall health, 64 ounces serves as a practical benchmark for most adults. This target aligns with the hydration needs necessary to maintain optimal physiological functions and can aid in preventing dehydration. Understanding the importance of this quantity can encourage individuals to be more mindful of their fluid intake throughout the day.

6. What food group is a primary source of protein?

A. Fruits

B. Dairy

C. Meat, poultry, fish, eggs, beans, and legumes

D. Grains

The primary source of protein includes meat, poultry, fish, eggs, beans, and legumes. These foods contain high-quality protein that is essential for various bodily functions such as muscle building, repair, and maintenance. Proteins are made up of amino acids, some of which are essential and must be obtained through diet. The inclusion of a variety of these protein sources in the diet contributes to overall health, as they provide vital nutrients beyond protein, such as vitamins and minerals. While dairy is a good source of protein, it is not as comprehensive in terms of variety and options as meat, poultry, fish, eggs, and legumes. Fruits generally contain very little protein and are more focused on providing vitamins, minerals, and carbohydrates. Grains also provide some protein, but typically in lower amounts compared to the higher protein density found in the options listed under the correct answer. Thus, the group that encompasses all these protein-rich foods is the most comprehensive answer.

7. What is the difference between saturated and unsaturated fats?

A. Saturated fats are liquid at room temperature

B. Saturated fats typically come from plant oils

C. Saturated fats are solid at room temperature and typically come from animal products

D. Unsaturated fats contain no double bonds in their structure

Saturated fats are characterized by their chemical structure, which consists of fatty acid chains that have no double bonds between carbon atoms. This lack of double bonds allows the chains to be closely packed together, resulting in a solid form at room temperature. This is why saturated fats are typically found in animal products such as meat, dairy, and certain oils such as coconut oil and palm oil. In contrast, unsaturated fats have one or more double bonds in their fatty acid chains, creating kinks that prevent tight packing, leading to a liquid state at room temperature. These fats are often derived from plant sources, such as olive oil, canola oil, and nuts. Additionally, while unsaturated fats are beneficial for heart health, the presence of double bonds in their structure distinguishes them from saturated fats. Understanding this difference is crucial, as it helps in making informed dietary choices regarding fat consumption and overall nutrition.

8. Which vitamin is critical for vision and immune function?

A. Vitamin B12

B. Vitamin D

C. Vitamin C

D. Vitamin A

Vitamin A is crucial for vision and immune function due to its role in various physiological processes. It is a key component of rhodopsin, a protein found in the retina that enables the eyes to adjust to low light levels, thus playing an essential role in night vision. Additionally, Vitamin A contributes to the maintenance of healthy epithelial (skin and mucous membrane) tissues, which serve as barriers against pathogens, supporting the immune system's ability to fight infections. Furthermore, Vitamin A is involved in the regulation of immune responses, helping to maintain various immune functions such as the development of lymphocytes, which are critical for adaptive immunity. Deficiencies in Vitamin A can lead to significant visual impairments and increased susceptibility to infections, highlighting its importance for both vision and immune health. In contrast, other vitamins like B12, D, and C have distinct roles in the body, such as assisting in energy metabolism, bone health, and antioxidant functions, but they do not specifically provide the same critical benefits for vision and immune function that Vitamin A does.

9. Why are whole grains considered healthier than refined grains?

A. They are cheaper and more accessible

B. They retain fiber, vitamins, and minerals lost during refinement

C. They have a lower caloric content

D. They taste better and are easier to digest

Whole grains are considered healthier than refined grains primarily because they retain fiber, vitamins, and minerals that are often lost during the refinement process. When grains are refined, the bran and germ, which are the most nutrient-rich parts of the grain, are removed. This results in a product that is lower in nutritional value and benefits. Whole grains, on the other hand, include all parts of the grain kernel: the bran, germ, and endosperm. This means they provide a higher content of dietary fiber, which is important for digestive health, helps regulate blood sugar levels, and can aid in weight management. Additionally, whole grains contain various essential nutrients such as B vitamins, iron, magnesium, and antioxidants that contribute to overall health. While cost and taste can vary depending on individual preferences and specific products, the key health benefits of whole grains lie in their richer nutrient profile, making them a superior choice for a balanced diet.

10. What type of dietary fat is considered harmful to heart health?

A. Monounsaturated fats

B. Polyunsaturated fats

C. Saturated fats

D. Omega-3 fatty acids

Saturated fats are considered harmful to heart health primarily because they can raise levels of LDL cholesterol (often referred to as "bad" cholesterol) in the bloodstream. High levels of LDL cholesterol are associated with an increased risk of heart disease, as they can lead to the buildup of plaque in the arteries, which narrows them and can ultimately result in cardiovascular problems such as heart attacks and strokes. While some dietary fats, such as monounsaturated and polyunsaturated fats, are beneficial and can actually help improve heart health by lowering LDL levels and increasing HDL cholesterol (the "good" cholesterol), saturated fats do not have this positive effect. Omega-3 fatty acids, a type of polyunsaturated fat found in fish and flaxseeds, are particularly known for their heart-protective properties. Understanding the distinction between these types of fats is crucial for promoting overall cardiovascular health. Making informed dietary choices, particularly regarding the intake of saturated fats, is essential for maintaining a healthy heart and reducing the risk of heart disease.