

**CHS 214 Model Answer**Nouf A. Aljawini

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**Student Name***Final Grade:***ID number****First Question:****Place T in front the correct sentence and F in front the wrong one and Correct it.**

[ F ] 1. All monosaccharides have the same sweetness.

**DIFFERENT**

[ F ] 2. Galactose, is a monosaccharide; sometimes known as a blood sugar.

**GLUCOSE**

[ T ] 3. Fructose has exactly the same the chemical formula as glucose but it has different structure.

[ F ] 4. Nonessential amino acids need to be supplied in your diet.

**ESSENTIAL AMINO ACID**

[ F ] 5. HDL is a protein that function as an immune defense.

**TRANSPORT PROTEIN**[ F ] 6. Stomach acids activates the salivary enzymes which catalyses starch digestion in the stomach. **INACTIVATES**

[ T ] 7. Proteins help maintain stable pH levels in body fluids by behaving as buffers.

**Second Question:****Fill in the blanks**1) --hydrolysis----- is a chemical reaction that breaks disaccharides by--  
adding----- molecule of water to yield two molecules of monosaccharide.

2) ---Fructose-----is a monosaccharide that is known as fruit sugar.

3) When--pepsinogen----- comes in contact with HCl, it is converted to the active enzyme---pepsin-----

4) --phytates-----found in the husks of the grains and seeds, bind to minerals and prevent their absorption.

5) --Soluble-----fibers easily digested by bacteria forming ---viscous-----  
-----layer.

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6)—**Incomplete protein" low quality protein"**----- A protein that lacks one or more essential amino acids in the proportions needed by the body.

7)-**Protein Denaturation**----- the change in the protein's shape and consequent loss of its function brought by heat, agitation, acid, base, alcohol, heavy metals or other agents.

**Third Question:****MCQs: Choose the right answer:****1. Carbohydrates are found virtually in all food except:**

- a. milk
- b. meat.**
- c. bread.
- d. fruits.

**2. The storage form of glucose in the body is:**

- a. insulin
- b. maltose.
- c. glucagon.
- d. glycogen.**

**3. The Ultimate goal for carbohydrates digestion and absorption is to yield:**

- a. fibers.
- b. glucose.**
- c. enzymes.
- d. amylase.

**4. What does the pancreas secrete when the blood glucose rises? When blood glucose falls?**

- a. Insulin; glucagon.**
- b. glucagon; insulin.
- c. insulin; glycogen.
- d. glycogen; epinephrine.

**5. Which of the following foods provide the highest quality protein?**

- a. Egg**
- b. Corn
- c. Gelatin
- d. Whole grains

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**6. Proteins that facilitate chemical reactions are:**

- a. buffers.
- b. enzymes.**
- c. hormones.
- d. antigens.

**7. A chemical structure that differentiates one amino acid from another:**

- a. **Side group.**
- b. Amine group.
- c. Acid group
- d. All of the above.

**8. In the stomach, hydrochloric acid:**

- a. **Denatures protein and activates pepsin.**
- b. Hydrolyzes proteins and denature pepsin.
- c. Condenses protein and facilitate digestion.
- d. Non of the above.

**9. Energy available in 1/2 cup of rice that 15 grams of carbohydrates:**

- a. 4 kcals.
- b. 40 kcals.
- c. 60 kcals.**
- d. 15 kcals.

**10. Deficiency of energy or nutrients is known as:**

- a. Undernutrition.**
- b. Overnutrition.
- c. Anabolism.
- d. Catabolism.

**11. Macronutrients are:**

- a. Carbohydrates and proteins.
- b. Carbohydrates, proteins and fat.**
- c. Carbohydrates, proteins, fats, vitamins and minerals.
- d. Vitamins and Minerals.

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**12. Nitrogen intake less than the sum of all nitrogen excretion is known as:**

- a. Positive nitrogen balance.
- b. Negative nitrogen balance.
- c. Nitrogen equilibrium.
- d. None of the above.

**13. A water insoluble fibrous protein that is primary constituent of hair and nails:**

- a. Insoluble Fibers.
- b. Soluble fibers.
- c. Collagen.
- d. Keratin.

**14. Proteins that are responsible for fighting infections and has important role in immunity :**

- a. Enzymes
- b. Antigens
- c. Antibodies
- d. Hormones.

**15. If a patient complains of constipation , what is the best food option you recommend:**

- a. Bran flakes.
- b. Yogurt.
- c. Milk.
- d. Croissant.

**16. If a person suffers from hyperlipidemia, the best breakfast option is:**

- a. Cheese sandwich
- b. Oat meal and fruits
- c. Low fat milk
- d. Omelet.

**17. Choose the best meal option that provides a vegetarian person with the protein requirement:**

- a. Pasta with tomato sauce.

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- b. Rice and salad.
- c. Biscuit and orange juice.
- d. Beans and Rice.

**18. Which of the following is essential amino acid:**

- a. Glycine
- b. leucine
- c. Serine
- d. Tyrosin

**Fourth Question:****A) What is Dietetics?**

the health profession responsible for the application of nutrition science to promote human health and treat disease

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**B) What is conditionally essential amino acid? Give an example.**

- **Conditionally essential amino acid:** An amino acid that is normally made in the body (nonessential) but becomes essential under certain circumstances, such as during critical illness.
- **Example**
- People with the disease **phenylketonuria (PKU)** must control their consumption of phenylalanine.
- PKU is a genetic disorder that impairs phenylalanine metabolism.
- People with PKU lack sufficient amounts of an enzyme (phenylalanine hydroxylase) that converts phenylalanine to tyrosine, so tyrosine becomes an essential amino acid.
- glutamine is a main fuel for rapidly dividing cells and plays a key role in transporting nitrogen between organs. Although normally considered nonessential, glutamine can become essential after trauma or during periods of critical illness that increase the body's need for it.

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- The amino acid arginine can also become essential during conditions of illness or severe physiological stress.

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### C) Make a comparison between Kwashiorkor and Marasmus?

In its most severe states, protein-energy malnutrition (PEM) takes the form of kwashiorkor or marasmus.

Kwashiorkor is predominantly a protein deficiency, whereas marasmus is mainly an energy deficiency.

Variable	Kwashiorkor	Marasmus
Skeletal muscle	No major losses	Significant losses
Serum proteins	Significantly decreased	Relatively normal
Adipose tissue	Preserved	Significant loss
Body weight	Relatively normal	Significant loss
Edema	Pitting edema common	Absent
Predisposing factors	Ample energy with little or no protein	Starvation, lack of both protein and total energy

Data from McLaren DS. 1992. *A colour atlas and text of diet-related disorders*, 2nd ed. London: Mosby Europe; Torun B, Chew F. 1999. Protein-energy malnutrition. In Shils ME, Olson JA, Shike M, Ross AC, eds. *Modern nutrition in health and disease*, 9th ed. Baltimore, MD: Williams & Wilkins; Phinney SD. 1981. The assessment of protein nutrition in the hospitalized patient. *Clinics in Laboratory Medicine* 1:767-774.