Advanced Nutrition and Food Science Assessment

Nutrition & Food Science · Answer Key · 8 Questions

1. Which specific chemical process occurs during the denaturation of proteins in food preparation?

A) The synthesis of new amino acid bonds
B) The disruption of hydrogen bonds and tertiary structures
C) The oxidation of fatty acid chains
D) The hydrolysis of glucose molecules

2. What is the primary function of the coenzyme B12 (cobalamin) in the human metabolic pathway?

A) Regulating blood calcium levels
B) Assisting in DNA synthesis and the formation of red blood cells
C) Breaking down starch into disaccharides
D) Facilitating the absorption of Vitamin C

3. Which monosaccharide is the primary product of the hydrolysis of lactose?

A) Galactose and Glucose
B) Fructose and Sucrose
C) Glucose and Maltose
D) Fructose and Glucose

4. In the context of lipids, what structural characteristic defines a trans-fatty acid?

A) A long hydrocarbon chain with no double bonds
B) A saturated fatty acid with a phosphate group
C) A double bond with hydrogen atoms on opposite sides of the carbon chain
D) A lack of glycerol backbone

5. Which digestive enzyme is secreted by the pancreas to specifically catalyze the breakdown of lipids into fatty acids and glycerol?

A) Pepsin
B) Amylase
C) Lipase
D) Trypsin

6. What is the chemical byproduct of the Maillard reaction that contributes to the browning and flavour profile of roasted foods?

A) Glycosylamines and melanoidins
B) Acetic acid
C) Lactic acid
D) Ethanol

7. Which mineral is an essential cofactor for the enzyme carbonic anhydrase and is critical for maintaining acid-base balance in the blood?

A) Calcium
B) Zinc
C) Magnesium
D) Potassium

8. The glycemic index (GI) of a food is a measure of how quickly which specific molecule enters the bloodstream?

A) Fructose
B) Glucose
C) Sucrose
D) Starch