



UNIVERSITY EXAMINATIONS
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN HUMAN NUTRITION AND DIETETICS

HNDS 122: MACRONUTRIENTS

STREAMS: Y1S2

TIME: 2 HOURS

DAY/DATE:

INSTRUCTIONS:

- Answer **ALL** questions
- Do not write anything on the question paper
- No reference materials are allowed in the examination room
- **No** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely

SECTION A: MULTIPLE CHOICE QUESTIONS (15 MARKS)

1. The general formula of monosaccharides is
 - a. $C_{2n}H_2O_n$
 - b. $C_nH_2O_{2n}$
 - c. $C_nH_{2n}O_{2n}$
 - d. $C_nH_{2n}O_n$
2. What is a bond between amino acids called?
 - a. Ionic bond
 - b. Acidic bond
 - c. Peptide bond
 - d. Hydrogen bond
3. Conversion of messages carried by mRNA into amino acid sequences is called
 - a. Transcription
 - b. Replication
 - c. Translation
 - d. DNA repair
4. A polysaccharide which is often called animal starch is
 - a. Glycogen
 - b. Starch
 - c. Inulin
 - d. Dextrin

5. Which of the following is a sugar alcohol
 - a. Methanol
 - b. Mannitol
 - c. Trehalose
 - d. Xylulose
6. Which of the following factors is not responsible for the denaturation of proteins?
 - a. Heat
 - b. Charge
 - c. pH change
 - d. Organic solvents
7. Lipids are soluble in ____.
 - a. Water
 - b. Inorganic solvents
 - c. Polar solvents
 - d. Organic solvents
8. Class of carbohydrates which cannot be hydrolyzed further, is known as?
 - a. Disaccharides
 - b. Polysaccharides
 - c. Proteoglycan
 - d. Monosaccharide
9. Starch consists of
 - a. Unbranched amylose and branched amylopectin
 - b. Branched amylose and branched amylopectin
 - c. Unbranched amylose and unbranched amylopectin
 - d. None of these
10. Which of the following statement is true
 - a. Oxidative rancidity is observed more frequently in vegetable fats than animal fats
 - b. Plants fats do not undergo oxidative rancidity
 - c. Oxidative rancidity can be effectively checked by dehydrogenation of fatty acids
 - d. Oxidative rancidity is observed more frequently in animal fats than vegetable fats
11. Sucrose is a
 - a. Monosaccharide
 - b. Disaccharide
 - c. Polysaccharide
 - d. Triose
12. Choose the monounsaturated fatty acid out of the following-
 - a. Linoleic acid
 - b. Linolenic acid
 - c. Oleic acid
 - d. Stearic acid

13. Which of the following is also known as invert sugar?
- Fructose
 - Dextrose
 - Glucose
 - Sucrose
14. How is the secondary structure of a protein stabilized?
- Van der Waals forces
 - Hydrogen bonding
 - Covalent bond
 - Hydrophobic bond
15. Generally fats with unsaturated fatty acids are _____ at room temperature (25°C)
- Solid
 - Liquid in the presence of oxygen
 - Liquid in the absence of oxygen
 - Liquid

SECTION B Short Answer Questions (25 MARKS)

- Name three examples of soluble fibers (3 marks)
- Differentiate between essential and non-essential amino acids (2 marks)
- Explain the digestion of lipids between the mouth and stomach (4 marks)
- Explain the importance of fats to the bioavailability of other nutrients. (4 marks)
- Describe the digestion of carbohydrates in the small intestines (5 marks)
- Explain the role of cholesterol in the human body system (4 marks)
- Name three (3) chronic diseases associated with high consumption of fatty foods (3 marks)

SECTION C Long Answer Questions (30 MARKS)

- Using illustrations, describe the chemical classification of proteins (12 marks)
 - Describe four common lipoproteins and their functions (8 marks)
- Describe the chemical and mechanical digestion of meat in the body (10 marks)