

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NURSING

NURS 113: MEDICAL BIOCHEMISTRY 1

STREAMS: BSC NURSING

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 16/12/2020

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- All questions are compulsory. Ensure that all your answers are properly numbered.
- Part I: multiple Choice Questions (MCQ): Write the correct answer on the space provided in the answer booklet. Each MCQ is one mark.
- Part II: Short Answer Questions-Answer questions following each other on the answer booklet.
- Part III: Long Answer Questions: Answer each question on the answer booklet.

PART I: MCQ (10 MARKS)

1. All of the following are the diseases associated with biomembrane changes except:
 - A). Cystic fibrosis
 - B). Emphysema
 - C). Myasthenia gravis
 - D). Epilepsy
2. Which of the following is not an essential fatty acid?
 - A). Oleic acid
 - B). Linoleic acid
 - C). Arachidonic acid
 - D). Linolenic acid
3. In competitive inhibition, an inhibitor;
 - A) Binds at several different sites on an enzyme
 - B) Binds covalently to the enzyme
 - C) Binds only to the ES complex
 - D) Binds reversibly at the active site
4. Lock-and-key” model of enzyme action proposed by Fisher implies that:
 - A). the active site is flexible and adjust to substrate
 - B). the active site requires removal of PO₄ group

- C). the active site is complementary in shape to that of the substrate
D). Substrates change conformation prior to active site interaction
5. m-RNA is a complimentary copy of:
A). Transfer RNA
B). Ribosomal DNA
C). Ribosomal RNA
D). A single strand of DNA
6. The repeating unit in hyaluronic acid is:
A). Glucuronic acid and N-acetyl galactosamine
B). Glucuronic acid and galactosamine
C). Glucuronic acid and glucosamine
D). Glucuronic acid and N-acetyl glucosamine
7. In which of the following types of enzyme water may be added to a C=C double bond without breaking the bond?
A). Hydrolase
B). Hydratase
C). Hydroxylase
D). Esterase
8. In protein structure, the α -helix and β -pleated sheet are examples of:
A). Primary structure
B). Secondary structure
C). Tertiary structure
D). Quaternary structure
9. Inherited deficiency of enzyme β -glucocerebrosidase produces:
A). Fabry's disease
B). Niemann-Pick disease
C). Gaucher's disease
D) Tay-Sach's disease
10. All of the following are sulfur containing amino acids found in proteins except:
A). Cysteine
B). Threonine
C). Methionine
D). Homocysteine

PART II: SHORT ANSWER QUESTIONS (30 MARKS)

1. Give a general illustration of peptide bond formation. (4 marks)
2. Describe pathogenesis of Covid-19. (5 marks)
3. What are the major functions of conjugated proteins in the body? (6 marks)
4. Name sugar present in milk and draw its *Haworth projection* formula. (3 marks)

5. Outline biosynthesis of Eicosanoids indicating target sites of ant-inflammatory drugs. (7 marks)
6. Highlight the biomedical importance of β -Glucan. (5 marks)

PART III: LONG ANSWER QUESTIONS (30 MARKS)

1. Discuss application of enzymes in clinical diagnosis. (15 marks)
 2. Using specific examples, discuss the structure and medical relevance of monosaccharide derivatives found in the body. (15 marks)
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