

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BIOC 205: BIOCHEMISTRY OF VITAMINS AND MINERALS

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 17/04/2018

11.30 A.M – 1.30 P.M

INSTRUCTION:

- Answer question one and any two question
- Do not write anything on question paper

1. (a) What are vitamins? List the distinct properties of vitamins. [5marks]
(b) Differentiate between ergocalciferol and cholecalciferol in the diet. [4marks]
(c) Explain the association between beriberi and vitamins intake. [5marks]
(d) Draw the structure of folic acid and explain its roles in biological systems. [5marks]
(e) What are the functional differences between selenium and zinc minerals? [4marks]
(f) What are the causes and clinical symptoms associated with Menkes Kinky hair syndrome?
(g) With examples outline the major classifications of vitamins and minerals. [4marks]
2. (a) Give the structure, roles, sources, deficiency and toxicity linked to vitamin A. [10marks]
(b) Using structural illustration, differentiate between phyloquinone and menaquinone. [4marks]

- (c) Fluoride should be highly regulated in the body. Describe the sources, functions and toxicities associated with this mineral. [6marks]
3. (a) Sometimes, some vitamins may be found in association with minerals. Give an examples and reason for such associations. [5marks]
- (b) What are the roles of:
- (i) Pyridoxine [5marks]
- (ii) Iron? [5marks]
- (c) Explain the reasons as to why it's easy for people to suffer fat soluble toxicities. [5marks]
4. (a) Outline the sources and roles of sodium in the body. [10marks]
- (b) Using graphical illustrations, explain the variations in development of osteomalacia with age. [10marks]
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