

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF FOOD SCIENCE AND TECHNOLOGY**

FOST 323: FOOD CHEMISTRY II

STREAMS: Y3 S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 31/3/2021

8.30 AM – 10.30 AM

INSTRUCTIONS:

- Answer ALL Questions in Section A and any other two Questions in Section B.

SECTION A

1. State six biological functions of vitamin B6 (Pyridoxine). [6 Marks]
2. (a) Explain the stability of vitamin A and provitamin A carotenoids during food processing and storage. [4 Marks]
(b) Describe the biological functions of vitamin B12 Cyanocobalamin. [5 Marks]
3. Enumerate the general function of minerals and trace elements. [6 Marks]
- 4.(a) Explain the terms; (i) food additive according to the (Council Directive 89/107/ EEC. [3 Marks]
(ii) ADI with reference to food additives. [3 Marks]
(b) Explain the purpose of ADI. [3 Marks]

SECTION B

5. (a) Describe the stability and degradation of vitamin E during processing and storage.

[5 Marks]

(b) Using relevant examples explain the functional properties of vitamins in food processing.

[10 Marks]

(c) List four dietary anti-vitamin factors, food material in which they can be found and how they can be are deactivated.

[5 Marks]

6(a) (i) State the nutrient whose deficiency results in rickets, osteoporosis, and osteomalacia.

[1 Mark]

(ii) Of the above mentioned nutrient, discuss its biological functions, dietary sources and absorption in the G.I.T.

[9 Marks]

(b) Using examples, discuss the conditions affecting stability of thiamine (Vitamin B₁).

[10 Marks]

7(a) Discuss the effect of processing on nutritional value of foods.

[14 Marks]

(b) Food additives have the potential to cause true allergic (immunological) reactions. Describe 3 examples of food additives reported to cause adverse reactions.

[6 Marks]

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