



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (FOODS NUTRITION AND DIETETICS)

HFN 148: MICRONUTRIENTS

DATE: 24/5/2022

TIME: 8.30-10.30 AM

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## INSTRUCTIONS:

This paper consists of two sections A and B

### SECTION A

#### Specific Instructions

- This section has one question
- This question is **COMPULSORY**
- The question is 30 Marks

#### QUESTION ONE (30 MARKS)

- Explain the role of folate before and during pregnancy (2 marks)
- Outline reasons why Vitamin K deficiency is common among new born children (3 marks)
- Highlight three (3) ways in which people can get vitamin D (3 marks)
- Citing their dietary sources explain different forms of vitamins A (3marks)
- What is toxicity and how does it relate to vitamin and mineral consumption (2 marks)
- Certain food habits interfere with the absorption of thiamine and may lead to a deficiency, elaborate (3 marks)
- Using examples differentiate between enhancers and inhibitors of nutrient bioavailability (4 marks)
- Highlight reasons for micronutrient deficiencies amongst patients undergoing dialysis (3 marks)
- Explain minerals of concern that have reduced requirement in old age (3 marks)

- j) Give an account of zinc under each the following sub heading
- i) Functions in the body (2 marks)
  - ii) Dietary sources (2 marks)

## **SECTION B:**

### **Specific Instructions**

- This section has four (4) question
- Answer any two (2) questions

**Each question is 20 Marks**

### **QUESTION TWO (20 MARKS)**

- a) Using a diagram illustrate the different categories and characteristics of micronutrients (10 marks)
- b) Discuss the role of vitamin B-6 in disease prevention (10 marks)

### **QUESTION THREE (20 MARKS)**

- a) After a nutrition survey you concluded on high prevalence of a vitamin C deficiency, due to poor dietary intakes among the community members
- i. Explain your evidence that the community members were vitamin C deficient (5 marks)
  - ii. Discuss dietary changes for the community members to improve on vitamin C intakes (10 marks)
- b) Describe the interaction of Iron with Vitamin A, Calcium, Copper, Iodine and zinc (5 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Eating a varied diet of colorful plant foods may have benefits that go beyond the power of vitamins and minerals., elaborate (10 marks)
- b) Discuss micronutrient supplementation for different population groups (10 marks)

### **QUESTION FIVE (20 MARKS)**

- a) Describe community members who are prone to micronutrient deficiencies. (10 marks)
- b) Advice health stakeholders on food fortification, as an intervention for addressing vitamin and mineral inadequacies in Kenya. (10 marks)