



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS**

**2021/2022 ACADEMIC YEAR**

**FIRST YEAR FIRST SEMESTER MAIN EXAMINATION**

**FOR THE DEGREE**

**OF**

**HUMAN NUTRITION AND DIETETICS**

**COURSE CODE: HND 204**

**COURSE TITLE: MICRONUTREINTS**

**DATE: 29/04/2022**

**TIME: 12-2pm**

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**INSTRUCTIONS TO CANDIDATES**

Answer all questions in **SECTION A** and **B**  
Answer **TWO** questions in **SECTION C**  
Read additional instructions under various sections

**Section A: ANSWER ALL QUESTIONS (10 MARKS)**

1. Which of the following statements is false?
  - A. Minerals supplements may be toxic in large doses.
  - B. High cooking does not destroy mineral content of the food.
  - C. You can get minerals only from plant foods.
  - D. Your body cannot manufacture minerals, so they must be obtained from food you eat.
2. The mineral that controls the function of thyroid gland is?
  - A. phosphorus
  - B. iodine
  - C. calcium
  - D. iron
3. Which of the following mineral is involved in protein metabolism and oxidation reactions?
  - A. Molybdenum.
  - B. Manganese.
  - C. Magnesium.
  - D. Calcium.
4. Why is folate important for expectant mothers?
  - A. Helps reduce risk of neural tubal defects
  - B. Helps prevent preeclampsia
  - C. Helps prevent still birth
  - D. None of the above
5. Which vitamin protects us from pellagra disease?
  - A. Vitamin C.
  - B. Vitamin B3
  - C. Vitamin B7
  - D. None of the above
6. Name the vitamins that are essential for brain development?
  - A. Vitamin B12 and B9
  - B. Vitamin B9 and B7
  - C. Vitamin B12 and Vitamin C

- D. None of the above
7. Identify food sources rich in Vitamin B12.
- A. Rice and hens egg.
  - B. Carrot and chickens breast
  - C. Goats liver and spirulina
  - D. Chocolate and green gram
8. One of the person below is likely to suffer from micronutrient deficiency
- A. A woman with a mixed diet of cereals, beans, vegetables and milk
  - B. A man who mostly eats maize porridgemost days of the week
  - C. A child who eats adequately blended fortified foods
  - D. None of the above
9. \_\_\_\_\_ helps in the regulation of blood volume and blood pressure.
- A. Iron
  - B. Iodine
  - C. Sodium
  - D. Phosphorous
10. In the body Vitamin A is stored in the
- A. Liver
  - B. Skin
  - C. Lung
  - D. Kidney

**SECTIONB:THIS SECTION CONTAINS FIVE QUESTIONS EACH SIX MARKS.**

**ANSWER ALLQUESTIONS (30 MARKS)**

11. a) What is Vitamin toxicity. (2 marks)
- b) Differentiate between nutrient supplementation and fortification. (4 marks)
12. a) Which vitamins are associated with metabolizing fats? (3 marks)
- b) Describe are the factors that influence bioavailability of minerals from food that we eat? (3 marks)
13. a) Which micronutrients are responsible for fluid balance in the body? (3 marks)
- b) Outline any four signs and symptoms of vitamin A deficiency. (4 marks)
14. a) Give any two food sources of vitamin D. (1 mark)

- b) Explain absorption of calcium in the body. (5 marks)
- 15.a) Identify **ANY TWO** clinical signs and symptoms of scurvy? (2 marks)
- b) Pellagra is caused by deficiency of which micronutrient. Identify any three symptoms of this deficiency disease. (4 marks)

**SECTION C: THIS SECTION CONTAINS THREE QUESTIONS EACH 15 MARKS.**

**ANSWER ANY TWO QUESTIONS (30 MARKS)**

16. a) Discuss FIVE micronutrients of public health concern. (10 marks)
- b) Discuss any two strategies used to control vitamin A deficiency in Kenya. (5 marks)
17. Mineral deficiency otherwise known as 'silent hunger' is rampant in Africa. Discuss risk factors for mineral deficiency. (15 marks)
18. Using illustrations describe the absorption of fat soluble vitamins. (15 marks)