



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCE  
DEPARTMENT OF REHABILITATION MEDICINE  
BACHELOR OF SCIENCE IN PHYSIOTHERAPY  
END OF JANUARY-APRIL 2026 TRIMESTER EXAMINATIONS**

**UNIT CODE: PHT 234                      UNIT NAME: Principles of nutrition**

**DATE:                      7<sup>th</sup> April 2026**

**TIME:                      TWO HOURS**

**START:                      11.15am                      STOP: 1:15pm**

**INSTRUCTIONS (physical exams)**

- 1. Do not write on this question paper**

(Marks and questions distribution as per program curriculum.)

**INSTRUCTIONS (Online examinations)**

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This online exam shall take 2 Hours
4. Late submission of the answers will not be accepted
5. Ensure your web-camera is on at all times during the examination period
6. No movement is allowed during the examination
7. Idling of your machine for 5 min or more will lead to lock out from the exam
8. The Learning Management System (LMS) has inbuilt integrity checks to detect cheating
9. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
10. In case you have any questions call the invigilator for this exam on Tel. 0705833434 and or the Head of Department on Tel 0720491032
11. For adverse incidences please write an email to: [amiu.examinations@amref.ac.ke](mailto:amiu.examinations@amref.ac.ke)

**Question One (30 marks)**

- a) Explain the relationship between nutrition, health and disease. (6 marks)
- b) Discuss four factors that affect the health of an individual. (4 marks)
- c) Define the term epigenetics. (2 marks)
- d) Distinguish between food insecurity and food shortage. (4 marks)
- e) Explain the concept of dietary diversification. (2 marks)
- f) Briefly explain the role of community food and nutrition interventions in reducing malnutrition at the population level. (3 marks)
- g) Describe three major functions of proteins in the human body and explain what may happen when protein intake is inadequate. (4 marks)
- h) Define the term sports nutrition. (1 marks)
- i) Distinguish between macronutrients and micronutrients. (2 marks)

**Question Two (20 marks)**

- a) Define malnutrition. (2 marks)
- b) Explain four types of malnutrition. (4 marks)
- c) Differentiate between nutrition-specific interventions and nutrition-sensitive interventions. Give an example for each. (6 marks)
- d) Discuss the four dimensions of household food security. (8 marks)

**Question Three (20 marks)**

- a) Define the term nutrigenomics. (2 marks)
- b) Explain the 4 key concepts in nutrigenomics. (8 marks)
- c) Explain the conceptual framework of the causes of undernutrition, distinguishing between immediate, underlying, and basic causes. (6 marks)
- d) A household consumes mainly maize meal, tea, and sugar with very little fruits, vegetables, or protein foods. **Identify two** likely nutrient deficiencies. Explain the possible **health consequences** of these deficiencies. (4 marks)

**Question Four (20 marks)**

- a) Compare micronutrient supplementation with food-based nutrition strategies. (2 marks)
- b) Discuss the four types of micronutrient supplementation strategies. (8 marks)
- c) State and explain five causes of food insecurity. (10 marks)

**Question Five (20 marks)**

A rural community reports high levels of child stunting, frequent infections, and limited dietary diversity. Most households rely on one staple crop and have limited access to animal-source foods and fresh vegetables.

- a) Identify and explain three possible causes of the poor nutritional status in this community. (6 marks)
- b) Propose practical community nutrition interventions that could improve the nutritional situation. (8 marks)
- c) Discuss three possible challenges that are likely to be encountered when implementing the proposed programs above. (6 marks)

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