

**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
ADVANCED CERTIFICATE OF SECONDARY EDUCATION
EXAMINATION**

155/1

FOOD AND HUMAN NUTRITION 1

(For Both School and Private Candidates)

Time : 3 Hours

Year: 2014

Instructions

1. This paper consists of sections **A** and **B**.
2. Answer all questions in section **A** and only **three (3)** question from section **B**.
3. Non-programmable calculators may be used.
4. Communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (40 Marks)

Answer all questions in this section

1. Define food composition and list three major nutrients found in staple foods.
2. Differentiate between saturated and unsaturated fats and give one food source for each.
3. Explain three factors that contribute to household food insecurity.
4. (a) Define food fortification.
(b) Mention one cereal and one salt product commonly fortified in Tanzania.
5. Explain the role of yeast in chemical leavening and how it differs from physical raising agents.
6. State two natural compounds used to protect grains from insect damage and describe their mode of action.
7. Explain the effect of drying on vitamin content in fruits and vegetables.
8. Distinguish between food safety and food quality.
9. Describe two stages of wet milling in cereal processing.
10. State two problems associated with underground storage of grains.

SECTION B (60 Marks)

Answer only three questions from this section

11. A farmer mixes 10 liters of milk containing 3% fat with 20 liters of milk containing 2% fat. Calculate the fat content of the mixture. Discuss the importance of blending milk with different fat contents in commercial dairy processing.
12. Discuss the bioavailability of iron and zinc in plant-based foods. Explain how antinutritional factors such as phytates and tannins reduce mineral absorption, and suggest methods to improve bioavailability.

13. Describe traditional methods of storing grains and fish in Tanzania. Discuss common post-harvest losses and propose modern techniques to minimize these losses.
14. Explain the process of chemical, physical, and biological leavening in baking. Give examples and indicate the advantages and disadvantages of each method.
15. Discuss food fortification and preservation. Explain the role of chemical preservatives and compare them with one natural method of pest control in stored grains.