

**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 : 2010

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 state two functions of dietary fiber in the human body.
2. Differentiate between saturated and unsaturated fats.
3. Explain the difference between chronic and transitory food insecurity and give two factors that contribute to food insecurity.
4. (a) Define food fortification.
(b) Mention two foods commonly fortified in Tanzania and the nutrients added.
5. Distinguish between chemical, physical, and biological raising agents in baking.
6. Explain the role of yeast in bread making and state one function of salt in baking.
7. Describe three factors that influence basal metabolic rate (BMR).
8. State two natural compounds used to protect grains against pests and mention two health hazards of improper pesticide use.
9. Define wet milling and outline the effect of drying on food quality.
10. Differentiate between food safety and food quality.

SECTION B (60 Marks)

Answer only three questions from this section

11. A farmer mixes 10 liters of milk with 4% fat with 20 liters of milk with 2% fat. Calculate the fat percentage of the resulting mixture and explain the nutritional significance of such blending.
12. Discuss the concept of bioavailability of minerals and explain the effect of antivitamins on nutrient absorption, providing examples.

13. Describe traditional methods of storing grains and fish. Explain the post-harvest losses that occur due to poor storage in tropical regions and suggest measures to minimize these losses.
14. Prepare a one-day meal plan suitable for an elder with diabetes. Justify your choices in terms of nutrient content, energy requirements, and health benefits.
15. Discuss food fortification and preservation methods. Explain the role of chemical preservatives in foods and provide examples. Suggest one natural alternative to chemical preservatives for controlling pests.