

**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: 2011

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 security and list two challenges of achieving it at the household level.
2. Explain three functions of proteins in the human body.
3. (a) List any three water-soluble vitamins.
(b) Give one deficiency disease associated with each vitamin.
4. Distinguish between chemical, physical, and biological raising agents.
5. Explain the role of warm liquids in bread making.
6. Describe two natural compounds used to protect stored grains against pests.
7. State two differences between food quality and food safety.
8. Describe the effect of drying on food quality.
9. Explain two methods to improve post-harvest food security.
10. Define dietary fiber and mention one source.

SECTION B (60 Marks)

Answer only three questions from this section

11. A farmer blends 15 liters of milk with 3% fat with 25 liters of milk with 1.5% fat. Calculate the fat content of the resulting mixture and discuss its nutritional relevance.
12. Discuss the bioavailability of minerals in foods and explain the effects of antivitamin on nutrient absorption, giving examples.
13. Describe traditional grain and fish preservation methods. Discuss problems in tropical storage and suggest measures to minimize losses.

14. Prepare a one-day meal plan for an elder. Explain your choices in terms of nutrient content, energy requirements, and dietary guidelines.
15. Explain cereal and salt fortification. Discuss the role of chemical preservatives in foods and give one natural alternative for controlling pests.