

**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: 2015

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 carbohydrates and distinguish between sugar and starch, giving one example of each.
2. Explain three functions of proteins in the human body.
3. Describe two environmental factors that affect national food security.
4. Explain three health hazards associated with improper pesticide use.
5. (a) List three water-soluble vitamins.
(b) Give one deficiency disease associated with each vitamin.
6. State two effects of post-harvest food losses on household income and national food supply.
7. Explain the effect of milling quality on the nutritional value of cereals.
8. Distinguish between chemical preservatives and natural protective compounds in grains.
9. Describe two factors influencing basal metabolic rate (BMR).
10. Explain the difference between chronic and transitory food insecurity.

SECTION B (60 Marks)

Answer only three questions from this section

11. A dairy cooperative blends 15 liters of milk with 4% fat and 25 liters with 2% fat. Calculate the fat percentage of the resulting mixture and explain its significance for meeting daily nutritional requirements.
12. Discuss the process of wet milling in cereal processing. Explain its effect on starch and protein content, and how it influences the quality of flour for baking.
13. Describe natural compounds used to protect stored grains from insects and rodents. Compare their effectiveness with chemical pesticides and discuss the advantages and disadvantages of each.

14. Explain the different methods of food fortification, including cereal, salt, and oil fortification. Discuss the nutritional benefits and potential limitations of each method.
15. Analyze the impact of environmental degradation, population growth, and civil conflicts on food security. Suggest measures that can improve household and national food security.