

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

155/2

FOOD AND HUMAN NUTRITION 2

(For Both School and Private Candidates)

Time : 3 Hours

ANSWERS

Year : 2002

Instructions

1. This paper consists of sections **A** and **B**.
2. Answer all questions in section **A** and only **two (2)** 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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1. Define food security and explain two major indicators of food insecurity.

Food security refers to a situation where all people at all times have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

One major indicator of food insecurity is hunger, which is manifested through undernourishment, insufficient food intake, and visible signs of malnutrition in individuals and communities.

Another indicator is unstable access to food, where families may experience seasonal shortages or rely heavily on food aid and coping strategies such as reducing meal frequency.

2. Explain three functions of proteins in the human body.

Proteins are essential for growth and repair of tissues. They provide the structural framework for muscles, skin, hair, and nails.

Proteins also play a vital role in the production of enzymes and hormones that regulate body processes, including metabolism and immune responses.

In addition, proteins serve as a secondary source of energy when carbohydrates and fats are insufficient in the body.

3. State four advantages of crop rotation.

Crop rotation helps to maintain soil fertility by allowing different crops to replenish specific nutrients in the soil.

It reduces the buildup of pests and diseases since alternating crops breaks the life cycles of harmful organisms.

Crop rotation improves soil structure and organic matter through the incorporation of different root systems.

It also promotes efficient use of land by diversifying crop production and reducing the risk of total crop failure.

4. (a) Define malnutrition.

Malnutrition is a condition that arises when the body does not receive adequate nutrients in the right proportions, leading to undernutrition or overnutrition.

(b) Mention two causes of marasmus.

One cause of marasmus is severe deficiency of calories due to prolonged starvation.

Another cause is early weaning combined with limited access to supplementary foods.

5. Explain three methods of soil conservation.

Contour farming helps to reduce water runoff by ploughing along the natural contours of the land.

Terracing creates step-like structures on slopes, which slow down water flow and minimize soil erosion.

Agroforestry involves planting trees alongside crops, providing soil cover and reducing the impact of wind and water erosion.

6. State four factors influencing livestock distribution in Tanzania.

Climatic conditions such as rainfall and temperature determine the availability of pasture and water resources.

Soil fertility influences the type of forage available for livestock.

Cultural practices and traditions guide communities in selecting and keeping specific livestock species.

Government policies, including land allocation and disease control programs, affect livestock distribution.

7. List four post-harvest practices that help to reduce food losses.

Proper drying of grains prevents mold growth and spoilage.

Sorting and grading help to remove damaged or diseased produce before storage.

Using improved storage facilities such as silos reduces pest infestations.

Timely transportation of harvested crops prevents losses due to delays.

8. (a) Define pests.

Pests are organisms that damage crops, livestock, or stored food products, thereby reducing quality and yield.

(b) Mention three methods of controlling crop pests.

Biological control involves using natural predators or parasites to suppress pest populations.

Chemical control uses pesticides to eliminate or reduce pests.

Cultural practices such as crop rotation and timely weeding help to prevent pest infestations.

9. Describe three factors influencing the choice of a balanced diet.

The age of an individual determines nutrient requirements, with children needing more proteins for growth and adults requiring balanced energy sources.

Health status affects food choices, as sick individuals may require special diets to aid recovery.

Economic status influences the ability to access a variety of foods, with wealthier families affording diverse and nutritious diets.

10. List four advantages of artificial insemination in livestock production.

Artificial insemination allows for the use of superior male genetics across large populations.

It reduces the spread of sexually transmitted diseases in livestock.

Farmers save costs by eliminating the need to keep breeding males.

It facilitates the breeding of animals that are geographically distant.