

**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**

**ANSWERS**

**Year: 2005**

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**Instructions**

1. This paper consists of sections A and B.
2. Answer all questions in section A and **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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**1. (a) Define balanced diet.**

**(b) Mention four characteristics of a balanced diet.**

**(c) Explain three effects of unbalanced diet on human health.**

(a) A balanced diet is a diet that contains all the essential nutrients, including carbohydrates, proteins, fats, vitamins, minerals, and water, in the right amounts and proportions to maintain health, growth, and proper body functions.

(b) One characteristic of a balanced diet is that it provides adequate energy to meet the daily requirements of the body for physical and mental activities.

Another characteristic is that it contains the correct proportions of macronutrients such as carbohydrates, proteins, and fats.

A balanced diet also includes sufficient amounts of micronutrients like vitamins and minerals, which are essential for proper body functioning.

It must also be safe and free from harmful substances or contaminants to promote good health.

(c) An unbalanced diet may cause malnutrition, leading to conditions such as kwashiorkor, marasmus, and anemia.

It can also lead to obesity and related complications such as hypertension, diabetes, and cardiovascular diseases.

An unbalanced diet weakens the immune system, making the body more susceptible to infections and illnesses.

**2. (a) Differentiate between macronutrients and micronutrients.**

**(b) Give two examples of each.**

**(c) State three functions of macronutrients.**

(a) Macronutrients are nutrients required by the body in large amounts, such as carbohydrates, proteins, and fats, which provide energy and support growth. Micronutrients are nutrients needed in small amounts, such as vitamins and minerals, but they are still essential for maintaining good health.

(b) Examples of macronutrients are proteins and carbohydrates. Examples of micronutrients are iron and vitamin C.

(c) Macronutrients provide the energy required for daily activities and body processes.

They are essential for growth and repair of tissues, for example proteins build muscles and organs.

They regulate body processes, such as fats helping in absorption of fat-soluble vitamins and carbohydrates maintaining blood sugar levels.

**3. (a) What is food security?**

**(b) State four pillars of food security.**

**(c) Explain two challenges facing food security in Tanzania.**

(a) Food security is 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 for an active and healthy life.

(b) The first pillar is food availability, which refers to the constant supply of adequate food through production, distribution, and imports.

The second pillar is food access, which ensures that people have the resources to obtain sufficient food for a nutritious diet.

The third pillar is food utilization, which involves proper food use based on nutritional knowledge, water, and sanitation.

The fourth pillar is stability, which ensures that availability, access, and utilization of food are consistent over time without sudden shortages.

(c) One challenge facing food security in Tanzania is climate change, which causes unpredictable rainfall, droughts, and floods that reduce agricultural productivity.

Another challenge is poor infrastructure, such as inadequate storage facilities and rural roads, which leads to post-harvest losses and limits food distribution.

**4. (a) Explain the meaning of nutrient deficiency diseases.**

**(b) Give three examples of such diseases, their causes, and symptoms.**

(a) Nutrient deficiency diseases are diseases that occur when the body lacks adequate amounts of specific essential nutrients, leading to impaired growth, development, or functioning of organs and tissues.

(b) One example is rickets, caused by deficiency of vitamin D, calcium, or phosphorus. It results in weak, soft bones, bow legs, and delayed growth in children.

Another example is scurvy, which is caused by lack of vitamin C. Its symptoms include bleeding gums, swollen joints, fatigue, and slow wound healing.

A third example is goiter, caused by iodine deficiency. It is characterized by an enlarged thyroid gland and swelling in the neck.

**5. Assess the role of government policies in promoting food production and nutrition in Tanzania.**

Government policies provide subsidies on agricultural inputs such as fertilizers and improved seeds, which encourage farmers to increase production.

They also invest in irrigation schemes and rural infrastructure, ensuring farmers can grow crops throughout the year and access markets easily.

Policies support nutrition programs such as school feeding, which improves student health and learning outcomes.

The government implements fortification programs that reduce widespread nutrient deficiencies among the population.

By regulating food safety standards, policies ensure that the food consumed is safe and nutritious, reducing health risks.

**6. (a) Define complementary feeding.**

**(b) State three principles of complementary feeding.**

**(c) Explain two effects of poor complementary feeding practices.**

(a) Complementary feeding is the process of introducing other foods and liquids to an infant's diet in addition to breast milk, starting from around six months of age, to meet growing nutritional needs.

(b) One principle of complementary feeding is that foods should be introduced gradually, starting with soft, mashed foods and progressing to more solid foods.

Another principle is that meals should be frequent and in adequate amounts to meet the child's nutritional requirements.

A third principle is that complementary foods must be safe, clean, and prepared under hygienic conditions to prevent infections.

(c) Poor complementary feeding can cause malnutrition in infants, leading to stunted growth, underweight, and poor development.

It also exposes infants to diarrhea and other infections due to unhygienic preparation or unsafe food.

**7. Discuss the contribution of women in improving household food and nutrition security.**

Women contribute by engaging in small-scale farming, ensuring a steady supply of diverse food items for household consumption.

They play a key role in food preparation and meal planning, ensuring families receive balanced diets.

Women educate children and family members about proper nutrition, which improves overall health outcomes.

They are often responsible for food storage and preservation, which helps reduce post-harvest losses and maintain household food supply.

Women also participate in income-generating activities such as selling vegetables and dairy products, which provide money to buy other nutritious foods.

**8. (a) What is food preservation?**

**(b) Mention four traditional methods of food preservation.**

**(c) Explain two limitations of traditional food preservation methods.**

(a) Food preservation is the process of treating and handling food in ways that prevent spoilage and extend its shelf life while maintaining safety and quality.

(b) Traditional methods of food preservation include drying, salting, smoking, and fermentation.

(c) One limitation is that traditional methods often change the taste and texture of foods, which may not be acceptable to all consumers.

Another limitation is that they are less effective in preventing spoilage compared to modern methods, leading to shorter shelf life.

**9. Analyse five effects of urbanization on food and nutrition in Tanzania.**

Urbanization increases demand for processed and fast foods, leading to unhealthy diets and increased cases of obesity and diabetes.

It reduces agricultural land as rural areas are converted into towns and cities, lowering food production.

Urbanization causes rural-to-urban migration, reducing the labor force available for food production in villages.

It encourages dependence on purchased food rather than home-produced food, which can strain household budgets.

Urban lifestyles often lead to sedentary habits combined with poor diets, increasing non-communicable diseases such as hypertension and heart disease.

**10. Examine the importance of dietary guidelines in promoting public health.**

Dietary guidelines provide the public with scientifically based advice on how to eat for good health and disease prevention.

They help individuals make informed food choices that prevent malnutrition and lifestyle-related diseases.

Guidelines promote healthy weight management by encouraging balanced intake of nutrients and physical activity.

They also guide policymakers in designing school meal programs, food fortification, and national health campaigns.

By standardizing nutrition messages, dietary guidelines help unify community efforts toward healthier eating habits.