

**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 : 2014**

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**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. Describe five dietary assessment methods you can use to determine nutritional status of a community.

One method is the **24-hour dietary recall**, where community members are asked to recall all foods and beverages consumed in the previous 24 hours.

This method provides detailed information on recent intake and helps identify nutrient deficiencies or excesses. It is relatively quick and inexpensive, although it relies on participants' memory and honesty.

A second method is the **food frequency questionnaire (FFQ)**. This approach assesses how often specific foods or food groups are consumed over a defined period, such as a week or month. It is useful for understanding dietary patterns, identifying common nutrient gaps, and planning community interventions.

Third, **direct observation** involves trained personnel observing meals and food preparation in households, schools, or community settings. This method helps detect portion sizes, food handling practices, and actual consumption, reducing recall bias.

Fourth, the **dietary history method** gathers information about long-term dietary habits, including meal patterns, seasonal variations, and preferences. By combining interviews with household visits, practitioners can gain a comprehensive picture of the community's nutrition.

Fifth, **anthropometric measurements** indirectly assess dietary status by evaluating growth and body composition. Measurements like height-for-age, weight-for-age, weight-for-height, and mid-upper arm circumference indicate undernutrition, overweight, or stunting in populations.

2. Identify four benefits of vaccines and explain why immunization is important in nutrition programmes.

The first benefit of vaccines is **prevention of infectious diseases**. Vaccines protect individuals and communities from illnesses like measles, polio, and diphtheria, reducing disease burden.

Second, vaccines **improve child survival rates**. By preventing life-threatening diseases, vaccines reduce mortality among young children, contributing to healthier growth and development.

Third, vaccination **reduces malnutrition risk**. Preventing infections like diarrhea or pneumonia ensures children retain nutrients and energy needed for growth, as illness often leads to nutrient loss.

Fourth, vaccines **support economic and social development**. Healthy children require fewer medical interventions, allowing families and communities to allocate resources to education and livelihoods instead of treating preventable diseases.

Immunization is important in nutrition programmes because **disease prevention and nutritional status are closely linked**. Malnutrition weakens immunity, making children more susceptible to infections.

By ensuring immunization coverage, nutrition programmes enhance the effectiveness of interventions and improve overall community health.

3. “The causes of undernutrition are multisectoral.” Analyze immediate, underlying and basic causes of undernutrition among children under five years.

Immediate causes of undernutrition relate to **dietary intake and disease**. Insufficient intake of energy, protein, or micronutrients directly affects growth and health, while frequent infections like diarrhea or malaria reduce nutrient absorption and increase nutrient requirements.

Underlying causes are **household and community factors**. These include inadequate access to food, poor care and feeding practices, unsafe water and sanitation, and limited healthcare services. Socioeconomic challenges, such as poverty and lack of maternal education, further compound these problems.

Basic causes are **structural and systemic factors** affecting food security and health. These include political instability, weak governance, poor infrastructure, unequal resource distribution, and lack of coordinated multisectoral policies.

Addressing these fundamental issues is crucial for sustainable improvements in child nutrition.

4. Identify eight problems facing the catering industry in Tanzania.

One problem is **high operating costs**, including rent, utilities, and procurement of quality ingredients, which reduce profitability.

Second, **shortage of skilled personnel** affects service quality and food preparation efficiency.

Third, **unreliable supply chains** can lead to inconsistent availability of ingredients, impacting menu planning and customer satisfaction.

Fourth, **poor hygiene and food safety practices** may cause foodborne illnesses, damaging reputation and customer trust.

Fifth, **competition and market saturation** make it difficult for new or small businesses to survive.

Sixth, **fluctuating customer demand** due to seasonality or economic conditions can affect revenue stability.

Seventh, **limited access to finance** restricts business expansion or investment in modern equipment.

Eighth, **regulatory challenges and compliance** with food safety, taxation, and licensing requirements can be complex and costly.

5. Explain briefly seven items that should appear in a standard recipe.

The **recipe title** clearly identifies the dish and avoids confusion when selecting from a collection of recipes.

The **list of ingredients with precise quantities** ensures consistency in taste, nutrition, and portion sizes.

The **preparation steps** describe the sequence of actions required, such as washing, cutting, marinating, and cooking, to produce the intended outcome.

The **equipment and utensils required** are listed to prepare the dish efficiently and prevent delays during cooking.

The **cooking method and time** specify techniques like boiling, baking, frying, and durations, ensuring food is cooked safely and correctly.

The **yield or portion size** informs how many servings the recipe produces and allows adjustments for larger or smaller quantities.

The **nutritional information** may include calories, protein, fat, vitamins, and minerals, providing important guidance in nutrition-sensitive contexts.

6. Food handlers are key contributors to cross-contamination. Describe three ways through which they can contaminate food and six ways to prevent contamination.

One way food handlers can contaminate food is poor hand hygiene, such as not washing hands after using the toilet or touching raw ingredients. Pathogens on hands can easily transfer to prepared foods.

Second, improper handling of raw and cooked foods can lead to cross-contamination. For example, using the same cutting board for raw meat and vegetables spreads bacteria.

Third, personal habits, including touching the face, hair, or wounds, can introduce microorganisms into food. Sneezing, coughing, or jewelry can also contribute to contamination.

To prevent contamination, food handlers should wash hands regularly with soap and clean water, particularly before food preparation.

They should use separate equipment and utensils for raw and cooked foods to avoid cross-contamination. Wearing clean protective clothing and hairnets prevents hair and dirt from contaminating food.

Injuries should be covered with waterproof bandages, and food handlers should avoid eating, drinking, or smoking in food preparation areas. Maintaining good personal hygiene, including short, clean nails and regular bathing, also reduces contamination risk.

### **SECTION B (60 Marks)**

Answer two questions from this section

7. Explain nine approaches used to deliver nutrition education in developing countries.

One approach is **community meetings and workshops**, where practitioners educate groups about healthy diets, food safety, and child feeding practices. These gatherings encourage interaction and collective learning.

Second, **mass media campaigns** use radio, television, and newspapers to reach wide audiences with messages on nutrition, dietary diversity, and hygiene practices.

Third, **school-based programs** teach children about nutrition through classroom lessons, school gardens, and meal planning activities, creating long-term healthy habits.

Fourth, **home visits by health or nutrition workers** provide personalized guidance and monitor household feeding practices, especially for children and pregnant women.

Fifth, **peer education and support groups** engage community members to share knowledge, provide motivation, and model healthy behaviors.

Sixth, **demonstration sessions** show practical skills such as food preparation, proper portioning, and safe storage techniques, ensuring knowledge is applied effectively.

Seventh, **printed educational materials** like brochures, posters, and booklets reinforce key nutrition messages and serve as reference resources.

Eighth, **integration with existing health services**, such as immunization or antenatal clinics, ensures nutrition education reaches vulnerable groups efficiently.

Ninth, **participatory approaches**, including community-led discussions, cooking clubs, and problem-solving sessions, encourage active involvement and empower communities to adopt better nutrition practices.

8. Support breastfeeding practice as the best way of feeding infants by suggesting four ways working mothers can continue feeding breast milk during working hours.

First, working mothers can **express breast milk and store it safely** in clean containers for later use, ensuring infants continue to receive nutrients even when separated.

Second, employers can provide **designated lactation rooms** at workplaces, allowing mothers privacy and hygiene to breastfeed or express milk.

Third, **flexible working hours or breaks** enable mothers to feed their babies directly or express milk during the workday.

Fourth, mothers can use **coolers or insulated bags** to transport expressed milk, maintaining its quality and safety until the baby consumes it.

9. Identify seven reasons for controlling resources in catering and two control techniques.

Controlling resources in catering is important to reduce wastage, ensuring raw materials are used efficiently. It helps to maintain food quality by preventing overstocking or using expired ingredients. Resource control reduces operational costs, improving profitability.

It prevents theft or pilferage of materials. Proper control ensures timely availability of ingredients and supplies.

It helps maintain hygiene and safety, reducing spoilage and contamination. Lastly, resource control supports accurate menu planning and portioning, ensuring consistent customer service.

Two techniques for controlling resources include inventory management, which tracks stock levels, expiry dates, and usage patterns, and budgetary control, which monitors expenses, allocates funds efficiently, and prevents overspending.

10. State the objectives of Food and Nutrition Policy for Tanzania and explain three roles of the Ministry of Trade and Industry in making the policy a success.

The objectives of the Food and Nutrition Policy for Tanzania include **ensuring food security**, improving **nutritional status of the population**, **promoting food safety**, **reducing malnutrition**, and **supporting economic development through sustainable food systems**.

The Ministry of Trade and Industry supports the policy by **facilitating access to affordable and nutritious foods** through trade regulations and market interventions.

It **promotes food processing and preservation industries**, adding value to local agricultural produce and ensuring year-round availability.

The ministry also **monitors compliance with food safety standards**, enforcing regulations that protect consumers and support the implementation of nutrition policies.